



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

# **7610.4J**

## ***Special Military Operations***

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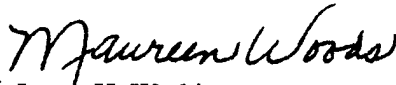
# SPECIAL MILITARY OPERATIONS

## 7610.4J

### FOREWORD

This order specifies procedures for air traffic control planning, coordination, and services during defense activities and special military operations. These procedures apply to all activities conducted in airspace controlled by or under the jurisdiction of the Federal Aviation Administration (FAA). The procedures contained herein shall be used as a planning guide by Department of Defense (DOD) personnel for operations in all areas. All facility personnel are required to be familiar with the provisions of this order which pertain to their operational responsibilities. Although every effort has been made to prescribe complete procedures

for these activities, it is impossible to provide them to cover every circumstance. Therefore, when a situation arises for which there is no specific procedure covered in this order, personnel shall exercise their best judgment. For administrative purposes, the military services have included this order into their inventory. This has been done to emphasize its applicability to DOD personnel including the National Guard and the Reserve Forces. Operational control and administration of this order remains under the purview of the FAA. Any changes will be coordinated prior to adoption, consistent with FAA policy.

  
James H. Washington  
Acting Director of Air Traffic

# TABLE OF CONTENTS

## Chapter 1. SERVICES AND RESPONSIBILITIES

### Section 1. INTRODUCTION

Paragraph	Page
1-1-1. PURPOSE .....	1-1-1
1-1-2. DISTRIBUTION .....	1-1-1
1-1-3. CANCELLATIONS .....	1-1-1
1-1-4. EXPLANATION OF CHANGES AND PUBLICATION DATES .....	1-1-1
1-1-5. EFFECTIVE DATE .....	1-1-1

### Section 2. APPLICATION

1-2-1. RESPONSIBILITIES .....	1-2-1
1-2-2. FAA/MILITARY MEMORANDUM OF UNDERSTANDING, AGREEMENT, EXECUTIVE ORDER .....	1-2-1
1-2-3. WORD MEANINGS .....	1-2-1
1-2-4. NOTES .....	1-2-1
1-2-5. ORDER CHANGES .....	1-2-1
1-2-6. MILITARY PROCEDURES IDENTIFICATION .....	1-2-2
1-2-7. REQUIREMENTS REVIEW .....	1-2-2

### Section 3. TERMS OF REFERENCE

1-3-1. ABBREVIATIONS .....	1-3-1
1-3-2. DEFINITIONS .....	1-3-4

### Section 4. ATC SERVICES BY THE MILITARY

1-4-1. WHERE SERVICE MAY BE PROVIDED .....	1-4-1
1-4-2. APPROACH CONTROL AUTHORITY .....	1-4-1
1-4-3. FREQUENCY REQUIREMENTS .....	1-4-1
1-4-4. LETTERS OF AGREEMENT (LOA) .....	1-4-1
1-4-5. TOWER EN ROUTE CONTROL SERVICE .....	1-4-1
1-4-6. EVALUATION BY THE AIR TRAFFIC DIVISION .....	1-4-1
1-4-7. SUSPENDING APPROACH CONTROL AUTHORITY .....	1-4-1
1-4-8. USE OF MILITARY AUTHORITY ASSUMES RESPONSIBILITY FOR SEPARATION OF AIRCRAFT (MARSA) .....	1-4-1
1-4-9. RELEASE OF AIRCRAFT TO GROUND CONTROL APPROACH (GCA) UNITS .....	1-4-2
1-4-10. CONTROL OF FLIGHTS IN PATTERN .....	1-4-2
1-4-11. EXCHANGE OF INFORMATION .....	1-4-2

### Section 5. AIR TRAFFIC REPRESENTATIVE (ATREP)

1-5-1. ASSIGNMENTS .....	1-5-1
1-5-2. RESPONSIBILITIES .....	1-5-1
1-5-3. FAMILIARIZATION FLIGHTS .....	1-5-1
1-5-4. REQUIRED ABSENCE .....	1-5-2



<b>Paragraph</b>	<b>Page</b>
1-5-5. ALTERNATE AIR TRAFFIC REPRESENTATIVE .....	1-5-2
1-5-6. DUTIES OF ALTERNATE .....	1-5-2
1-5-7. COORDINATION .....	1-5-2
1-5-8. LEAVE PERIODS .....	1-5-2

## **Section 6. FAA MILITARY LIAISON OFFICERS' RESPONSIBILITIES**

1-6-1. ACTIONS .....	1-6-1
----------------------	-------

## **Section 7. MISCELLANEOUS**

1-7-1. ASSIGNMENT OF MILITARY TOWER OFFICERS .....	1-7-1
1-7-2. SUPERVISOR OF FLYING (SOF) .....	1-7-1
1-7-3. MILITARY AIRSPACE MANAGERS .....	1-7-1

# **Chapter 2. EXERCISE PLANNING**

## **Section 1. GENERAL**

2-1-1. PURPOSE .....	2-1-1
2-1-2. POLICY .....	2-1-1
2-1-3. PROCEDURES .....	2-1-1
2-1-4. SPECIAL USE AIRSPACE (SUA) .....	2-1-1
2-1-5. MILITARY AIRSPACE PLANNING .....	2-1-1
2-1-6. CHANGES IN REQUIREMENTS .....	2-1-2
2-1-7. PUBLIC NOTIFICATION .....	2-1-2
2-1-8. PLANNING CONFERENCES .....	2-1-2

## **Section 2. AIR COMBAT COMMAND (ACC) EXERCISE/ OPERATIONAL READINESS INSPECTION (ORI)**

2-2-1. EXERCISE/ORI .....	2-2-1
2-2-2. NOTIFICATION OF EXERCISE/ORI .....	2-2-1

## **Section 3. AIR MOBILITY COMMAND (AMC) EXERCISE/OPERATIONAL READINESS INSPECTION (ORI)**

2-3-1. ORI .....	2-3-1
2-3-2. NOTIFICATION OF ORI .....	2-3-1

## **Section 4. UNITED STATES STRATEGIC COMMAND (USSTRATCOM) OPERATIONAL READINESS INSPECTION (ORI)**

2-4-1. ORI BOOKLETS .....	2-4-1
2-4-2. NOTIFICATION OF ORI .....	2-4-1
2-4-3. NOTIFICATION FORMAT .....	2-4-1
2-4-4. MISSION DELAYS .....	2-4-1

**Paragraph****Page****Section 5. AIR DEFENSE EXERCISES**

2-5-1. RADAR MONITORING OF FAKER AIRCRAFT .....	2-5-1
2-5-2. SEPARATION RESPONSIBILITY BETWEEN INTERCEPTOR/FAKER AIRCRAFT .....	2-5-1
2-5-3. CODE ASSIGNMENT WITHIN NORAD AREAS .....	2-5-1
2-5-4. STRIKE/FAKER IDENTIFICATION AND UNSAFE PROCEDURES .....	2-5-1

**Section 6. NAVY EXERCISES**

2-6-1. AIR CAPABLE SHIP OPERATIONS .....	2-6-1
2-6-2. FLEET READINESS EXERCISES .....	2-6-1
2-6-3. CENTRAL ALTITUDE RESERVATION FUNCTION (CARF) APPROVED STATIONARY ALTRV's .....	2-6-1
2-6-4. FLEET ELECTRONIC WARFARE SUPPORT GROUP .....	2-6-1
2-6-5. FAA/NAVY ATC PLANNING CONFERENCES .....	2-6-1
2-6-6. AIR CAPABLE SHIP FLYOFFS .....	2-6-1
2-6-7. LIAISON .....	2-6-1
2-6-8. FLEET AREA CONTROL AND SURVEILLANCE FACILITIES (FACSEAC) ...	2-6-1

**Section 7. ELECTRONIC COUNTER MEASURES  
(ECM) MISSIONS/EXERCISES**

2-7-1. APPLICATION .....	2-7-1
2-7-2. GENERAL .....	2-7-1
2-7-3. PARTICIPATION .....	2-7-1
2-7-4. COORDINATION .....	2-7-1
2-7-5. DURATION .....	2-7-1
2-7-6. ESTABLISHMENT .....	2-7-1
2-7-7. EXECUTION .....	2-7-1
2-7-8. ECM CLEARANCE .....	2-7-2
2-7-9. SUSPENSION OF ECM .....	2-7-2
2-7-10. ECM ACTIVITY TABLE .....	2-7-2

**Chapter 3. ALTITUDE RESERVATION (ALTRV) PROCEDURES****Section 1. GENERAL**

3-1-1. PURPOSE .....	3-1-1
3-1-2. POLICY .....	3-1-1
3-1-3. APPLICATION .....	3-1-1
3-1-4. ALTERNATE REFUELING TRACKS .....	3-1-2
3-1-5. USER REQUIREMENTS .....	3-1-2
3-1-6. ALTITUDE CRITERIA .....	3-1-2

**Paragraph****Page****Section 2. CENTRAL ALTITUDE RESERVATION FUNCTION (CARF) RESPONSIBILITIES**

3-2-1. CANADIAN AND OVERSEAS .....	3-2-1
3-2-2. CLEARANCE AUTHORITY .....	3-2-1
3-2-3. ALTRV APPROVAL REQUEST (APREQ) .....	3-2-1
3-2-4. ALTRV APPROVAL (APVL) .....	3-2-1
3-2-5. NOTIFICATIONS .....	3-2-2
3-2-6. AIRSPACE NOT UNDER CARF JURISDICTION .....	3-2-2
3-2-7. RESOLUTION OF CONFLICTS BETWEEN MISSIONS .....	3-2-2
3-2-8. FORMULATE ALTITUDE RESERVATION NOTICE TO AIRMEN (NOTAM) ..	3-2-2
3-2-9. ACKNOWLEDGMENT OF ALTRV APREQ'S .....	3-2-2
3-2-10. MESSAGES CLASSIFIED AS ENCRYPT FOR TRANSMISSION ONLY (EFTO) .....	3-2-2
3-2-11. LETTERS OF AGREEMENT .....	3-2-2

**Section 3. ATC FACILITY RESPONSIBILITIES**

3-3-1. APREQ REVIEW AND COORDINATION .....	3-3-1
3-3-2. ARTCC/CERAP APPROVED ALTRV'S .....	3-3-1
3-3-3. MISSION SEPARATION .....	3-3-1
3-3-4. DELIVERY INSTRUCTIONS .....	3-3-1
3-3-5. FLIGHT PROGRESS STRIPS .....	3-3-1
3-3-6. NOTIFICATION .....	3-3-1
3-3-7. ISSUE ALTITUDE RESERVATION NOTAM .....	3-3-1
3-3-8. TRUSTED AGENTS .....	3-3-2
3-3-9. CHANGES TO ALTRV ROUTING AND ALTITUDE .....	3-3-2

**Section 4. MISSION PLANNING**

3-4-1. RESOLVING MISSION CONFLICTS .....	3-4-1
3-4-2. ORDER OF PRECEDENCE .....	3-4-1
3-4-3. SPECIFY VOID TIME .....	3-4-2
3-4-4. RESCHEDULING .....	3-4-2
3-4-5. DELAY NOTIFICATIONS .....	3-4-2
3-4-6. EN ROUTE TIMING .....	3-4-2

**Section 5. ORIGINATOR RESPONSIBILITIES**

3-5-1. TWO OR MORE COMMANDS .....	3-5-1
3-5-2. TWO OR MORE SERVICES .....	3-5-1
3-5-3. MISSIONS REQUIRING EXTENSIVE ATC SUPPORT .....	3-5-1
3-5-4. PROJECT OFFICER .....	3-5-1
3-5-5. ALTRV'S ENTERING U.S. CTA/FIR .....	3-5-2
3-5-6. NO-NOTICE AND/OR DO NOT PASS TO AIR DEFENSE RADAR (NOPAR) MISSION .....	3-5-2

**Section 6. SEPARATION**

3-6-1. PLANNING/APPROVAL OF APREQ'S .....	3-6-1
3-6-2. MILITARY AUTHORITY ASSUMES AUTHORITY FOR SEPARATION OF AIRCRAFT (MARSA) .....	3-6-1
3-6-3. IN-FLIGHT SEPARATION .....	3-6-1
3-6-4. POSITION REPORTS .....	3-6-1
3-6-5. USE OF AIRSPACE THROUGH ALTRV .....	3-6-1

**Paragraph****Page****Section 7. SPECIAL/EMERGENCY ALTRV'S**

3-7-1. INTERNATIONAL PRESIDENTIAL FLIGHTS .....	3-7-1
3-7-2. PROCESSING WAIVERS .....	3-7-1
3-7-3. EMERGENCY ALTITUDE RESERVATIONS .....	3-7-1

**Section 8. ALTITUDE RESERVATION NOTAM'S**

3-8-1. CRITERIA .....	3-8-1
3-8-2. FORMULATION AND DISSEMINATION .....	3-8-1

**Section 9. ALTITUDE RESERVATION APPROVAL REQUEST  
(ALTRV APREQ), FORMAT, AND AMENDMENTS**

3-9-1. ALTRV APREQ's .....	3-9-1
3-9-2. FORMAT .....	3-9-1
3-9-3. ALTRV APREQ AMENDMENTS .....	3-9-3

**Section 10. FLIGHT PATH FORMAT COMPONENTS**

3-10-1. INTRODUCTION .....	3-10-1
3-10-2. DEFINITION .....	3-10-1
3-10-3. FORMAT .....	3-10-1
3-10-4. COMPONENTS .....	3-10-1
3-10-5. EVENTS THAT PRECEDE FIX/TIME .....	3-10-6
3-10-6. ALTRV APREQ EXAMPLES .....	3-10-6

**Chapter 4. FAA/NORAD/PACAF PROCEDURES FOR CONTROL  
OF AIR DEFENSE AIRCRAFT****Section 1. GENERAL**

4-1-1. POLICY .....	4-1-1
4-1-2. PROVISION OF ATC SERVICES .....	4-1-1
4-1-3. FAA AND MILITARY APPROVAL REQUIRED .....	4-1-1

**Section 2. ADDITIONAL REQUIREMENTS**

4-2-1. WHEN NORAD/PACAF LEVELS OF OPERATION CHANGE .....	4-2-1
4-2-2. ALTITUDE INFORMATION .....	4-2-1
4-2-3. LETTERS OF AGREEMENT .....	4-2-1
4-2-4. AWACS/NORAD SPECIAL FLIGHTS .....	4-2-1

**Section 3. DEFENSE EMERGENCIES**

4-3-1. DUTY STATUS .....	4-3-1
--------------------------	-------

**Paragraph****Page****Section 4. NUCLEAR DETONATION (NUDET) REPORTS**

4-4-1. FORWARDING INFORMATION .....	4-4-1
4-4-2. FORMAT .....	4-4-1
4-4-3. RETAINING DATA .....	4-4-1
4-4-4. AVOIDANCE OF HAZARDOUS RADIATION AREAS .....	4-4-1
4-4-5. GLASSEYE REPORTS .....	4-4-1

**Section 5. AIR DEFENSE LIAISON OFFICERS (ADLO'S)**

4-5-1. REGION CONFIGURATION CHART .....	4-5-1
4-5-2. ASSIGNMENTS .....	4-5-1
4-5-3. DUTIES WITH NORAD HEADQUARTERS OR NORAD REGION/SECTOR COMMANDER'S STAFF .....	4-5-1
4-5-4. ADDITIONAL ADLO DUTIES WITH NORAD SECTORS .....	4-5-2
4-5-5. ACCESS TO ADCF .....	4-5-3
4-5-6. CONVENE PERIODIC MEETINGS .....	4-5-3

**Section 6. INTERCEPTOR OPERATIONS**

4-6-1. DIVERSION TO ALTERNATE BASE .....	4-6-1
4-6-2. FAA RESPONSIBILITY .....	4-6-1

**Section 7. CONTROL INSTRUCTIONS**

4-7-1. CONTROL BY CANADIAN NORAD FACILITIES .....	4-7-2
4-7-2. AGREEMENT BETWEEN FAA AND MILITARY .....	4-7-2
4-7-3. TRANSFER CONTROL AT REQUEST OF ADCF .....	4-7-2
4-7-4. RELEASE OF AIRCRAFT TO THE ADCF .....	4-7-2
4-7-5. TIME OF TRANSFER OF CONTROL .....	4-7-2
4-7-6. CONTROL JURISDICTION OF INTERCEPTOR AIRCRAFT .....	4-7-2
4-7-7. ACTIVE SCRAMBLES .....	4-7-2
4-7-8. INTERCEPTOR OPERATIONS BEYOND U.S. TERRITORIAL LIMIT .....	4-7-2
4-7-9. SCRAMBLE AIRPORT LISTING .....	4-7-3
4-7-10. ADC AIR DIVISIONS/FAA REGIONS COORDINATION .....	4-7-3
4-7-11. ALERT FORCE EVALUATION (AFE) .....	4-7-3

**Section 8. FLUSH/DISPERSAL OPERATIONS**

4-8-1. NORAD/PIAD FLUSH/DISPERSAL REQUIREMENTS .....	4-8-1
4-8-2. CONDUCT OF OPERATIONS .....	4-8-1
4-8-3. LETTER OF AGREEMENT .....	4-8-1
4-8-4. PRIOR NOTIFICATION .....	4-8-1
4-8-5. "EXERCISE FLUSH" .....	4-8-1
4-8-6. "FLUSH" .....	4-8-1

**Section 9. AIR DEFENSE AIRCRAFT EMERGENCY PROCEDURES**

4-9-1. ARTCC/CERAP CONTROL OF AIR DEFENSE AIRCRAFT .....	4-9-1
4-9-2. ADCF CONTROL OF AIR DEFENSE AIRCRAFT .....	4-9-1
4-9-3. USE OF TERM "EMERGENCY CALL" .....	4-9-1

**Paragraph****Page****Section 10. FLIGHT PLANS**

4-10-1. PREFILED AND ABBREVIATED FLIGHT PLANS .....	4-10-1
4-10-2. DAILY TRAINING MISSIONS .....	4-10-1

**Section 11. SCRAMBLE/AIRBORNE ORDERS**

4-11-1. SCRAMBLE ORDERS .....	4-11-1
4-11-2. INFORMATION FURNISHED TO ATC FACILITY .....	4-11-1
4-11-3. AIRBORNE ORDERS .....	4-11-1

**Section 12. FAA AUTHORIZATION FOR INTERCEPTOR  
OPERATIONS (AFIO)**

4-12-1. AUTHORIZATION FOR INTERCEPTOR OPERATIONS .....	4-12-1
4-12-2. CHANGING MILITARY OR ATC REQUIREMENTS .....	4-12-1
4-12-3. AUTHORIZATION AND USE OF AFIO .....	4-12-1
4-12-4. AFIO SUSPENSION .....	4-12-1
4-12-5. INFORMATION PROVIDED TO AIR TRAFFIC CONTROL .....	4-12-1
4-12-6. REQUEST FOR VERTICAL SEPARATION .....	4-12-1
4-12-7. USE OF MODE 3/A CODE 7777 UNDER AFIO .....	4-12-1
4-12-8. MONITOR CODE 7777 WHEN THE AFIO IS EMPLOYED .....	4-12-2
4-12-9. INFORMATION PROVIDED THE ADCF .....	4-12-2

**Chapter 5. AIRCRAFT MOVEMENT INFORMATION  
SERVICE (AMIS)****Section 1. SCOPE**

5-1-1. PURPOSE .....	5-1-1
5-1-2. APPLICABILITY .....	5-1-1
5-1-3. NATIONAL REQUIREMENTS .....	5-1-1
5-1-4. LOCAL REQUIREMENTS .....	5-1-1

**Section 2. REGIONAL OFFICE/AIR DEFENSE LIAISON OFFICER (ADLO)  
RESPONSIBILITIES**

5-2-1. DEVELOPMENT .....	5-2-1
5-2-2. COORDINATION WITH ADLO .....	5-2-1
5-2-3. COORDINATING WITH MILITARY AUTHORITY .....	5-2-1
5-2-4. SIGNATURE .....	5-2-1
5-2-5. CONTENT .....	5-2-1
5-2-6. DISTRIBUTION .....	5-2-1
5-2-7. STAFFING AMIS POSITIONS .....	5-2-1

**Section 3. TOWER/RAPCON/RATCF/FACSFAC/FSS RESPONSIBILITIES**

5-3-1. FORWARDING INFORMATION .....	5-3-1
5-3-2. SECURITY CONTROL OF AIR TRAFFIC .....	5-3-1

**Paragraph****Page****Section 4. ARTCC RESPONSIBILITIES**

5-4-1. SECURITY CONTROL OF AIR TRAFFIC .....	5-4-1
5-4-2. EXCEPTIONS TO FURNISHING AMIS .....	5-4-1
5-4-3. SPECIAL INTEREST FLIGHTS .....	5-4-1
5-4-4. FACILITY DIRECTIVES .....	5-4-1
5-4-5. MONITOR/ANALYZE AMIS .....	5-4-1
5-4-6. AMIS UNKNOWN/INTERCEPT LOGS .....	5-4-1
5-4-7. EMERGENCY AMIS .....	5-4-1

**Section 5. INSTRUMENT FLIGHT RULES (IFR)/DEFENSE VISUAL  
FLIGHT RULES (DVFR) ADIZ FLIGHT PLANS**

5-5-1. AMIS WITHIN AN ADIZ-IFR .....	5-5-1
5-5-2. AMIS WITHIN AN ADIZ-DVFR .....	5-5-1
5-5-3. FORWARDING DVFR INFORMATION .....	5-5-1
5-5-4. STOPOVER DVFR FLIGHT PLANS .....	5-5-1
5-5-5. ADDRESSING DVFR FLIGHT PLAN MESSAGES .....	5-5-1

**Section 6. INFORMATION DISSEMINATION**

5-6-1. ADIZ INFORMATION .....	5-6-1
5-6-2. INITIAL AIRCRAFT MOVEMENT MESSAGES .....	5-6-1
5-6-3. AIR DEFENSE FACILITY REQUEST FOR TRANSMISSION .....	5-6-1
5-6-4. NAVY FLIGHT PLANS .....	5-6-1
5-6-5. SUPPLEMENTAL IDENTIFICATION DATA .....	5-6-1
5-6-6. INTERPHONE LINE CHECK .....	5-6-2
5-6-7. TEST ROCC/SOCC MESSAGE .....	5-6-2

**Section 7. SPECIAL INTEREST REPORTING**

5-7-1. CAT TRACK FLIGHTS .....	5-7-1
5-7-2. DEPARTURES WITHIN NORAD RADAR COVERAGE .....	5-7-1
5-7-3. DEPARTURES OUTSIDE NORAD RADAR COVERAGE .....	5-7-1
5-7-4. RADAR IDENTITY LOST .....	5-7-1
5-7-5. AMIS FOR OTHER SPECIFIC FLIGHTS .....	5-7-2
5-7-6. WITHHOLDING AIRCRAFT MOVEMENT INFORMATION .....	5-7-2
5-7-7. AIR DEFENSE EXERCISE FLIGHT PROGRESS STRIPS .....	5-7-2
5-7-8. PRESIDENTIAL AIRCRAFT .....	5-7-2

**Section 8. VIOLATIONS OF ADIZ REGULATIONS  
(14 CFR PART 99)**

5-8-1. UNKNOWN RADAR TRACK .....	5-8-1
5-8-2. CHECK DATA AT HAND .....	5-8-1
5-8-3. FORWARD KNOWN AIRCRAFT DATA TO NORAD .....	5-8-1
5-8-4. DETERMINE CAUSE FOR UNKNOWN RADAR TRACK .....	5-8-1
5-8-5. AIRCRAFT IDENTIFICATION BEFORE INTERCEPT .....	5-8-1
5-8-6. AIRCRAFT IDENTIFICATION AFTER INTERCEPT .....	5-8-1
5-8-7. RETAIN DATA .....	5-8-1
5-8-8. TIME ENTRY .....	5-8-1

<b>Paragraph</b>	<b>Page</b>
5-8-9. DEVIATION OF NORAD ADIZ TOLERANCES .....	5-8-1
5-8-10. TELEPHONE NOTIFICATION BY ARTCC/CERAP .....	5-8-2
5-8-11. REVIEW OF DEVIATIONS BY ARTCC/CERAP AND ADCF .....	5-8-2

### **Section 9. SPECIAL INTEREST FLIGHTS--CUBA**

5-9-1. PROVIDE AMIS .....	5-9-1
5-9-2. NORAD SPECIAL INTEREST FLIGHTS .....	5-9-1
5-9-3. INFORMATION FURNISHED .....	5-9-1
5-9-4. MARKING FLIGHT PROGRESS STRIPS .....	5-9-1
5-9-5. AMIS-CUBA .....	5-9-1

### **Section 10. NORAD AIRCRAFT MOVEMENT MESSAGE FORMAT**

5-10-1. NORAD AIRCRAFT MOVEMENT MESSAGES .....	5-10-1
--	--------

## **Chapter 6. SECURITY CONTROL OF AIR TRAFFIC AND NAVIGATION AIDS (SCATANA)**

### **Section 1. GENERAL**

6-1-1. SCOPE .....	6-1-1
6-1-2. COMMAND AUTHORITY .....	6-1-1

### **Section 2. RESPONSIBILITIES**

6-2-1. IMPLEMENTATION INSTRUCTIONS .....	6-2-1
6-2-2. NORAD DISSEMINATION .....	6-2-1
6-2-3. NORAD/ARTCC ALIGNMENT .....	6-2-1
6-2-4. DEVELOP LOCAL PROCEDURES .....	6-2-1

### **Section 3. AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER (ATCSCC)**

6-3-1. MAINTAIN SCATANA DIRECTIVES .....	6-3-1
6-3-2. NOTIFY FIELD FACILITIES .....	6-3-1
6-3-3. ISSUE FDC NOTAM .....	6-3-1
6-3-4. DEVELOP PROCEDURES .....	6-3-1

### **Section 4. ARTCC/CERAP ACTIONS**

6-4-1. MAINTAIN SCATANA DIRECTIVES .....	6-4-1
6-4-2. NOTIFY FIELD FACILITIES .....	6-4-1
6-4-3. DEVELOP PROCEDURES .....	6-4-1
6-4-4. SCATANA ACTION FORMS .....	6-4-1
6-4-5. EVALUATE TEST ACTIONS .....	6-4-1
6-4-6. ACTIONS BASED ON INSTRUCTIONS FROM MILITARY .....	6-4-1
6-4-7. DIVERSION AIRPORTS .....	6-4-2
6-4-8. DISTRIBUTION OF DIVERSION AIRPORT LISTS .....	6-4-2



**Paragraph****Page****Section 5. FACILITY ACTIONS**

6-5-1. SCATANA ACTION FORMS AT OPERATING POSITIONS .....	6-5-1
6-5-2. COMPLY WITH ARTCC/CERAP INSTRUCTIONS .....	6-5-1

**Section 6. ADLO/REGIONAL OFFICE ACTIONS**

6-6-1. NARRATIVE REPORTS .....	6-6-1
6-6-2. SCATANA PLAN SUPPLEMENTS .....	6-6-1

**Section 7. DIVERSION AIRPORTS**

6-7-1. INSTRUCTIONS FOR COMPILING DIVERSION AIRPORT LISTS AND HOW TO USE THE AVAILABLE LANDING LENGTH DATA .....	6-7-1
6-7-2. DIVERSION AIRPORTS LANDING LENGTHS (DISTANCES) REQUIRED FOR MINIMUM DIVERSION AIRPORTS AND DESIRED DIVERSION AIRPORTS .....	6-7-2

**Chapter 7. ESCORT OF HIJACKED AIRCRAFT****Section 1. GENERAL**

7-1-1. PURPOSE .....	7-1-1
7-1-2. REQUESTS FOR SERVICE .....	7-1-1
7-1-3. HANDLING PRIORITY .....	7-1-1
7-1-4. CONTROL RESPONSIBILITIES FOR U.S. AIRSPACE .....	7-1-1
7-1-5. CONTROL RESPONSIBILITIES FOR CANADIAN AIRSPACE .....	7-1-1
7-1-6. AIR/GROUND COMMUNICATIONS SECURITY .....	7-1-1
7-1-7. WEATHER/FLIGHT SAFETY LIMITATIONS .....	7-1-2

**Section 2. ESCORT PROCEDURES**

7-2-1. FACILITY NOTIFICATION .....	7-2-1
7-2-2. PILOT NOTIFICATION .....	7-2-1
7-2-3. VECTORS .....	7-2-1
7-2-4. RADAR REQUIREMENTS .....	7-2-1
7-2-5. AIRPORT LIMITATIONS .....	7-2-1
7-2-6. RESPONSIBILITIES PRIOR TO JOIN-UP .....	7-2-1
7-2-7. POSITIONING INSTRUCTIONS .....	7-2-1
7-2-8. TERMINATION HEADING .....	7-2-2

**Section 3. REPLACEMENT/RECOVERY OF ESCORT AIRCRAFT**

7-3-1. REPLACEMENT RESPONSIBILITIES .....	7-3-1
7-3-2. RECOVERY RESPONSIBILITIES .....	7-3-1
7-3-3. RETURN-TO-BASE .....	7-3-1
7-3-4. REFUELING OPERATIONS .....	7-3-1

**Paragraph****Page****Section 4. FORWARDING INFORMATION**

7-4-1. FAA HEADQUARTERS REQUIREMENTS .....	7-4-1
7-4-2. POSITION REPORTS WITHIN NORAD RADAR COVERAGE .....	7-4-1
7-4-3. POSITION REPORTS OUTSIDE NORAD RADAR COVERAGE .....	7-4-1

**Section 5. MISSION TERMINATION**

7-5-1. TERMINATION AUTHORITY .....	7-5-1
7-5-2. OVERFLIGHT CLEARANCE .....	7-5-1

**Chapter 8. ANTIDRUG OPERATIONS****Section 1. GENERAL**

8-1-1. PURPOSE .....	8-1-1
8-1-2. REQUESTS FOR SERVICE .....	8-1-1
8-1-3. HANDLING PRIORITY .....	8-1-1
8-1-4. RESPONSIBILITIES .....	8-1-1
8-1-5. SPECIAL AIRSPACE REQUIREMENTS .....	8-1-1
8-1-6. AIR/GROUND COMMUNICATIONS SECURITY .....	8-1-2
8-1-7. WEATHER/FLIGHT SAFETY LIMITATIONS .....	8-1-2
8-1-8. TWO-WAY RADIO COMMUNICATIONS FAILURE .....	8-1-2

**Section 2. DEPARTURE PROCEDURES**

8-2-1. FACILITY NOTIFICATION .....	8-2-1
------------------------------------	-------

**Section 3. SURVEILLANCE PROCEDURES**

8-3-1. INTERCEPT RESPONSIBILITY AND POSITIONING INSTRUCTIONS .....	8-3-1
8-3-2. ATC CLEARANCE REQUIREMENTS .....	8-3-1
8-3-3. RADAR REQUIREMENTS .....	8-3-1
8-3-4. TERMINATION HEADING .....	8-3-1

**Section 4. REPLACEMENT/RECOVERY OF AIRCRAFT**

8-4-1. REPLACEMENT RESPONSIBILITIES .....	8-4-1
8-4-2. RECOVERY RESPONSIBILITIES .....	8-4-1
8-4-3. RETURN-TO-BASE (RTB) .....	8-4-1
8-4-4. REFUELING OPERATIONS .....	8-4-1

**Section 5. FORWARDING INFORMATION**

8-5-1. POSITION REPORTING REQUIREMENTS .....	8-5-1
--	-------

**Paragraph****Page****Chapter 9. MILITARY OPERATIONS REQUIREMENTS****Section 1. CRITERIA**

9-1-1. PURPOSE .....	9-1-1
9-1-2. POLICY .....	9-1-1
9-1-3. AIRSPACE DESCRIPTION .....	9-1-1
9-1-4. LIMITATIONS .....	9-1-1
9-1-5. LETTERS OF AGREEMENT/PROCEDURE .....	9-1-1

**Section 2. ATCAA AND MOA PROCEDURES**

9-2-1. REQUIREMENT .....	9-2-1
9-2-2. USING AGENCY RESPONSIBILITIES .....	9-2-1
9-2-3. CONTROLLING AGENCY RESPONSIBILITY .....	9-2-1
9-2-4. ATC CONTROL WITHIN ATCAA'S AND MOA'S .....	9-2-1
9-2-5. NON-RADAR AND COMMUNICATIONS .....	9-2-1

**Section 3. AIRCRAFT ARRESTING SYSTEM,  
SINGLE FREQUENCY APPROACH (SFA), SIMULATED FLAMEOUT (SFO),  
CELESTIAL NAVIGATION (CELNAV) TRAINING**

9-3-1. OPERATION OF AIRCRAFT ARRESTING SYSTEMS .....	9-3-1
9-3-2. ARRESTING SYSTEMS CONTROL PANELS .....	9-3-1
9-3-3. ACTION REQUIRED BY FACILITY AIR TRAFFIC MANAGER .....	9-3-1
9-3-4. PUBLICATION OF INSTALLATION .....	9-3-2
9-3-5. LIABILITY AGREEMENTS FOR ARRESTING SYSTEMS .....	9-3-2
9-3-6. SINGLE FREQUENCY APPROACH (SFA) .....	9-3-2
9-3-7. SIMULATED FLAME-OUT (SFO) OPERATIONS .....	9-3-2
9-3-8. CELESTIAL NAVIGATION (CELNAV) TRAINING .....	9-3-3

**Chapter 10. AERIAL REFUELING****Section 1. GENERAL**

10-1-1. PURPOSE .....	10-1-1
10-1-2. OBJECTIVE .....	10-1-1
10-1-3. RESPONSIBILITY .....	10-1-1
10-1-4. SEPARATION .....	10-1-1
10-1-5. DEVIATIONS .....	10-1-1
10-1-6. CHRONOLOGY .....	10-1-1

**Section 2. TRACK REQUIREMENTS**

10-2-1. DESCRIPTION .....	10-2-1
10-2-2. NAVIGATION ALONG AIR REFUELING TRACK .....	10-2-1
10-2-3. ARIP ESTABLISHMENTS .....	10-2-1
10-2-4. DEGREE-DISTANCE TRACK DEFINITION .....	10-2-1
10-2-5. TANKER ORBIT PATTERNS .....	10-2-1

**Paragraph****Page****Section 3. ANCHOR REQUIREMENTS**

10-3-1. DESCRIPTION .....	10-3-1
10-3-2. NAVIGATION WITHIN ANCHOR AREA .....	10-3-1
10-3-3. ARIP ESTABLISHMENT .....	10-3-1
10-3-4. DEGREE-DISTANCE ANCHOR DEFINITION .....	10-3-1

**Section 4. PLANNING**

10-4-1. TRACK/ANCHOR PROPOSALS .....	10-4-1
10-4-2. COORDINATION .....	10-4-1
10-4-3. CRITERIA FOR ESTABLISHMENT .....	10-4-1
10-4-4. APPROVAL NOTIFICATION .....	10-4-2
10-4-5. PUBLICATION IN FLIP .....	10-4-2
10-4-6. MILITARY REGIONAL REPRESENTATIVE RESPONSIBILITIES .....	10-4-3
10-4-7. NIMA RESPONSIBILITIES .....	10-4-3
10-4-8. EFFECTIVE DATE .....	10-4-3
10-4-9. REVISIONS TO TRACKS/ANCHORS .....	10-4-3

**Section 5. OPERATIONS**

10-5-1. PROVISIONS FOR CONDUCTING AERIAL REFUELING .....	10-5-1
10-5-2. USER REQUIREMENTS .....	10-5-1
10-5-3. MARSA APPLICABILITY FOR AERIAL REFUELING .....	10-5-2
10-5-4. CRITERIA FOR SCHEDULING .....	10-5-2
10-5-5. SCHEDULING RESPONSIBILITIES .....	10-5-3
10-5-6. FLIGHT PLAN REQUIREMENTS .....	10-5-4
10-5-7. TANKER AIRCRAFT/FORMATION COMMANDER RESPONSIBILITIES ...	10-5-4
10-5-8. RECEIVER AIRCRAFT RESPONSIBILITIES .....	10-5-5
10-5-9. ATC CLEARANCE .....	10-5-5
10-5-10. RADAR VECTOR ASSISTANCE .....	10-5-5
10-5-11. ATC FACILITY RESPONSIBILITIES .....	10-5-5
10-5-12. COMMUNICATIONS FAILURE .....	10-5-6

**Section 6. SPECIAL REFUELING REQUIREMENTS**

10-6-1. PROVISIONS FOR SPECIAL TRACKS/ANCHORS .....	10-6-1
10-6-2. RESPONSIBILITY OF REQUESTING UNIT .....	10-6-1
10-6-3. OPERATIONS WITHIN AN ALTRV .....	10-6-1
10-6-4. OPERATIONS OUTSIDE AN ALTRV .....	10-6-1
10-6-5. IN-FLIGHT REQUESTS .....	10-6-1
10-6-6. SPECIAL EXERCISES .....	10-6-2
10-6-7. ISSUE NOTAM .....	10-6-2
10-6-8. VFR HELICOPTER REFUELING OPERATIONS .....	10-6-2
10-6-9. VFR REFUELING TRACK ESTABLISHMENT .....	10-6-2
10-6-10. REFUELING TRACK DEFINITION .....	10-6-2
10-6-11. OPERATING PROCEDURES .....	10-6-3
10-6-12. FLIGHT PLAN REQUIREMENTS .....	10-6-3
10-6-13. WEATHER MINIMUMS .....	10-6-3
10-6-14. ADHERENCE TO REFUELING TRACK .....	10-6-3

<b>Paragraph</b>	<b>Page</b>
10-6-15. FAA COORDINATION .....	10-6-3
10-6-16. PUBLICATION/SCHEDULING .....	10-6-3

## **Chapter 11. MILITARY TRAINING ROUTES (MTR)**

### **Section 1. GENERAL**

11-1-1. PURPOSE .....	11-1-1
11-1-2. POLICY .....	11-1-1
11-1-3. DEVIATIONS .....	11-1-1
11-1-4. PUBLICATION .....	11-1-1

### **Section 2. MTR ROUTE DESIGNATION CRITERIA**

11-2-1. LIMITATIONS .....	11-2-1
11-2-2. ROUTE IDENTIFICATION .....	11-2-1

### **Section 3. PUBLICITY**

11-3-1. INFORMATION TO THE PUBLIC .....	11-3-1
---	--------

### **Section 4. IR ROUTE DEFINITION**

11-4-1. ROUTE WIDTH .....	11-4-1
11-4-2. ROUTE ALIGNMENT .....	11-4-1
11-4-3. ALTITUDES .....	11-4-1
11-4-4. RE-ENTRY SEGMENTS .....	11-4-2
11-4-5. ALTERNATE ENTRY, EXIT, AND END POINTS .....	11-4-2
11-4-6. ROUTE REPORTING POINTS .....	11-4-2
11-4-7. SPECIAL OPERATING PROCEDURES .....	11-4-2
11-4-8. LOW ALTITUDE AIR-TO-AIR TRAINING (LOWAT) .....	11-4-2

### **Section 5. IR COORDINATION**

11-5-1. ESTABLISHING OR REVISING ROUTES .....	11-5-1
11-5-2. PUBLICATION .....	11-5-2
11-5-3. ROUTE REVIEW .....	11-5-8
11-5-4. EFFECTIVE DATE .....	11-5-8

### **Section 6. IR ROUTE USE**

11-6-1. SCHEDULING .....	11-6-1
11-6-2. LETTERS OF AGREEMENT- IR .....	11-6-1
11-6-3. TIE-IN FLIGHT SERVICE STATION .....	11-6-1
11-6-4. ADVISORY AND OPERATIONAL STATUS MESSAGES .....	11-6-2
11-6-5. FLIGHT PLAN REQUIREMENTS .....	11-6-2
11-6-6. IR USE DENIAL .....	11-6-3
11-6-7. ROUTE ADHERENCE .....	11-6-3
11-6-8. SPEED AUTHORIZATION .....	11-6-3
11-6-9. ENTRY/EXIT PROCEDURES .....	11-6-3

<b>Paragraph</b>	<b>Page</b>
11-6-10. COMMUNICATION FAILURE .....	11-6-3
11-6-11. LOST COMMUNICATIONS TRANSPONDER OPERATIONS .....	11-6-4
11-6-12. SEPARATION OF PARTICIPATING AIRCRAFT .....	11-6-4

### **Section 7. VR ROUTE DEFINITION**

11-7-1. ROUTE WIDTH .....	11-7-1
11-7-2. ROUTE ALIGNMENT .....	11-7-1
11-7-3. ALTITUDES .....	11-7-1
11-7-4. ROUTE ENTRY AND EXIT POINTS .....	11-7-1
11-7-5. ALTERNATE ENTRY/EXIT/END POINTS .....	11-7-1
11-7-6. SPECIAL OPERATING PROCEDURES .....	11-7-1

### **Section 8. VR COORDINATION**

11-8-1. ESTABLISHING OR REVISING ROUTES .....	11-8-1
11-8-2. PUBLICATION .....	11-8-1
11-8-3. ROUTE REVIEW .....	11-8-2
11-8-4. EFFECTIVE DATE .....	11-8-2

### **Section 9. VR ROUTE USE**

11-9-1. SCHEDULING .....	11-9-1
11-9-2. COMPLIANCE .....	11-9-1
11-9-3. TIE-IN FLIGHT SERVICE STATION .....	11-9-1
11-9-4. MONITOR 255.4 MHZ .....	11-9-1
11-9-5. FLIGHT PLAN REQUIREMENTS .....	11-9-1
11-9-6. ROUTE ADHERENCE .....	11-9-1
11-9-7. SPEED AUTHORIZATION .....	11-9-1
11-9-8. WEATHER MINIMUMS .....	11-9-2
11-9-9. TRANSPONDER PROCEDURES .....	11-9-2

## **Chapter 12. SPECIAL MILITARY FLIGHTS AND OPERATIONS**

### **Section 1. NIGHT WATCH**

12-1-1. APPLICATIONS .....	12-1-1
12-1-2. OPERATIONS .....	12-1-1
12-1-3. CLASSIFICATION .....	12-1-1

### **Section 2. USSTRATCOM ATTACK COMMAND AND CONTROL SYSTEM (SCACS) AIRCRAFT OPERATIONS**

12-2-1. SCACS AIRCRAFT .....	12-2-1
12-2-2. LAUNCHING OF POST ATTACK COMMAND AND CONTROL SYSTEM (PACCS) AIRCRAFT .....	12-2-1
12-2-3. OPERATIONS ON AN ALTRV .....	12-2-1
12-2-4. CLASSIFICATION .....	12-2-1
12-2-5. SCACS LAUNCH SCHEDULE .....	12-2-1

**Paragraph****Page****Section 3. OTHER USSTRATCOM CODED FLIGHTS**

12-3-1. BUST OUT .....	12-3-1
12-3-2. BUGGY RIDE .....	12-3-1
12-3-3. RADAR IDENTIFICATION OF USSTRATCOM EMERGENCY WAR ORDER (EWO) FLIGHTS .....	12-3-1

**Section 4. NUCLEAR ACCIDENTS/SAMPLING**

12-4-1. "FLYNET" FLIGHTS, NUCLEAR EMERGENCY TEAMS .....	12-4-1
12-4-2. NUCLEAR WEAPON ACCIDENTS ("BROKEN ARROW") .....	12-4-1
12-4-3. ATMOSPHERIC SAMPLING FOR NUCLEAR CONTAMINATION .....	12-4-1

**Section 5. NAVY CODED FLIGHTS**

12-5-1. NAVY "ECHO ITEM" MISSIONS .....	12-5-1
12-5-2. SCOPELIGHT EAST/WEST FLIGHTS .....	12-5-1

**Section 6. AIR DEFENSE RADAR EVALUATION**

12-6-1. AIR DEFENSE RADAR EVALUATION .....	12-6-1
--	--------

**Section 7. SPECIAL AIR MISSION/SCOOT**

12-7-1. APPLICATIONS .....	12-7-1
12-7-2. OPERATIONS .....	12-7-1

**Section 8. CRUISE MISSILE OPERATIONS**

12-8-1. PURPOSE .....	12-8-1
12-8-2. POLICY .....	12-8-1
12-8-3. OPERATIONAL CONDITIONS .....	12-8-1
12-8-4. ROUTE DESIGNATION (CRITERIA) AND OPERATING PROCEDURES ...	12-8-1
12-8-5. PUBLICATION .....	12-8-1
12-8-6. EFFECTIVE DATE .....	12-8-1

**Section 9. REMOTELY PILOTED VEHICLE (RPV)**

12-9-1. OPERATION .....	12-9-1
-------------------------	--------

**Section 10. USAF UNDERGRADUATE FLYING TRAINING (UFT)/  
PILOT INSTRUCTOR TRAINING (PIT)**

12-10-1. DEFINITIONS .....	12-10-1
12-10-2. KEY OPERATIONAL CONSTRAINTS .....	12-10-1
12-10-3. RADAR SERVICE REQUIREMENTS .....	12-10-1
12-10-4. MERGING TARGET VS STANDARD IFR SEPARATION .....	12-10-1
12-10-5. AIRSPACE REQUIREMENTS .....	12-10-1
12-10-6. MTR REQUIREMENTS .....	12-10-2
12-10-7. COMMUNICATION REQUIREMENTS .....	12-10-2
12-10-8. SCHEDULING .....	12-10-2

<b>Paragraph</b>	<b>Page</b>
12-10-9. STEREOTYPE ROUTING/ FLIGHT PLANS .....	12-10-2
12-10-10. LETTERS OF AGREEMENT (LOA's) .....	12-10-3
12-10-11. AUTHORIZATIONS .....	12-10-3

### **Section 11. SPACE SHUTTLE SUPPORT OPERATIONS**

12-11-1. PURPOSE .....	12-11-1
12-11-2. POLICY .....	12-11-1
12-11-3. BACKGROUND .....	12-11-1
12-11-4. ROUTINE LAUNCH/RECOVERY NOTIFICATION .....	12-11-1
12-11-5. CLASSIFIED LAUNCH/RECOVERY NOTIFICATION .....	12-11-1
12-11-6. FACILITY NOTIFICATION .....	12-11-1
12-11-7. FACILITY RESPONSIBILITIES .....	12-11-1

### **Section 12. FORMATION FLIGHT**

12-12-1. PURPOSE .....	12-12-1
12-12-2. POLICY .....	12-12-1
12-12-3. FORMATIONS .....	12-12-1
12-12-4. FORMATION DEPARTURE .....	12-12-1
12-12-5. CELL FORMATION .....	12-12-1
12-12-6. NONSTANDARD FORMATION TACTICS .....	12-12-1
12-12-7. CELL SEPARATION STANDARDS .....	12-12-2
12-12-8. NONSTANDARD FORMATION NOTIFICATION AND APPROVAL .....	12-12-2
12-12-9. AIR REFUELING FORMATION .....	12-12-3

### **Section 13. SPECIAL AIR MISSION "INFO"**

12-13-1. APPLICATIONS .....	12-13-1
12-13-2. OPERATIONS .....	12-13-1

## **Chapter 13. MILITARY RADAR UNIT DUTIES, RESPONSIBILITIES, AND PROCEDURES**

### **Section 1. GENERAL**

13-1-1. MILITARY RADAR UNIT (MRU)/AIRBORNE RADAR UNIT (ARU) .....	13-1-1
13-1-2. AIRBORNE RADAR UNIT (ARU) .....	13-1-1
13-1-3. TRANSFER OF RESPONSIBILITY .....	13-1-1
13-1-4. AIRBORNE WARNING AND CONTROL SYSTEM (AWACS) .....	13-1-1
13-1-5. FAA RESPONSIBILITY .....	13-1-1
13-1-6. ATC FACILITIES RESPONSIBILITY .....	13-1-2
13-1-7. RELEASE OF AIRSPACE .....	13-1-2
13-1-8. DELEGATION OF CONTROL AUTHORITY .....	13-1-2
13-1-9. MILITARY RESPONSIBILITY .....	13-1-2
13-1-10. ADDITIONAL AWACS RESPONSIBILITIES .....	13-1-3
13-1-11. SEPARATION BETWEEN PARTICIPATING AND NON-PARTICIPATING AIRCRAFT .....	13-1-3



**Paragraph****Page****Section 2. INTERCEPT TRAINING ACTIVITIES**

13-2-1. AREA OF OPERATION .....	13-2-1
13-2-2. RADAR SURVEILLANCE .....	13-2-1

**Section 3. FAA/MILITARY JOINT EVALUATIONS**

13-3-1. PURPOSE .....	13-3-1
13-3-2. SCOPE OF EVALUATION .....	13-3-1
13-3-3. ADVANCE COORDINATION .....	13-3-1
13-3-4. OBJECTIVES .....	13-3-1
13-3-5. BASIC EVALUATION TEAM .....	13-3-1
13-3-6. "TRUSTED AGENTS" .....	13-3-1
13-3-7. OUT BRIEFING .....	13-3-1
13-3-8. PREPARE JOINT REPORT .....	13-3-1

**Appendices**

Appendix 1. ....	A1-1
Appendix 2. ....	A2-1
Appendix 3. ....	A3-1
Appendix 4. ....	A4-1
Appendix 5. ....	A5-1
Appendix 6. ....	A6-1
Appendix 7. ....	A7-1
Appendix 8. ....	A8-1
Appendix 9. ....	A9-1
Appendix 10. ....	A10-1
Appendix 11. ....	A11-1
Appendix 12. ....	A12-1
Appendix 13. ....	A13-1
Appendix 14. ....	A14-1
Appendix 15. ....	A15-1
Appendix 16. ....	A16-1
Appendix 17. ....	A17-1
Appendix 18. ....	A18-1

# **Chapter 1. SERVICES AND RESPONSIBILITIES**

## **Section 1. INTRODUCTION**

### **1-1-1. PURPOSE**

This order specifies procedures for air traffic control planning, coordination, and services provided during defense activities and special military operations.

### **1-1-2. DISTRIBUTION**

This order is distributed to selected offices in Washington headquarters, regional offices, the William J. Hughes Technical Center, the Mike Monroney Aeronautical Center, all air traffic field facilities, international aviation field offices, flight inspection field offices, interested aviation public, and DOD activities.

### **1-1-3. CANCELLATIONS**

Special Military Operations, FAA Handbook 7610.4H dated October 2, 1990.

### **1-1-4. EXPLANATION OF CHANGES AND PUBLICATION DATES**

Changes/orders are published as needed. Procedural inquiries should be directed to FAA Headquarters, Air Traffic Operations Program, ATO-1, in accordance with paragraph 1-2-5.

### **1-1-5. EFFECTIVE DATE**

This order is effective November 3, 1998.

## Section 2. APPLICATION

### 1-2-1. RESPONSIBILITIES

a. Special military activities shall be provided services in accordance with the policy, criteria, and procedures in this order.

b. Supplemental procedures may be developed and, unless otherwise agreed to, implemented on an effective date after providing at least 40 days pre-implementation action after distribution of approved supplements.

### 1-2-2. FAA/MILITARY MEMORANDUM OF UNDERSTANDING, AGREEMENT, EXECUTIVE ORDER

Where deemed appropriate, any FAA/Military Memorandum of Understanding, Agreement and/or Executive Order which has national application will be included in this order.

### 1-2-3. WORD MEANINGS

As used in this order, except when context requires otherwise:

a. *Shall*, followed by a verb or the use of an appropriate action verb in the imperative sense, means a procedure is mandatory.

b. *Should*, followed by a verb, means a procedure is recommended.

c. *May* and *need not*, followed by a verb, mean a procedure is optional.

d. *Will*, followed by a verb, indicates futurity not a requirement for application of a procedure.

e. Words importing the singular include the plural.

f. Words importing the plural include the singular.

g. *Aircraft* means airframe, crew members, or both.

h. *Altitude* means altitude mean sea level, flight level, or both.

i. *Time*, when used in the context of a clock reading, is the hour in Coordinated Universal Time (UTC) or the local equivalent, as appropriate, and the minutes. Change to the next minute

is made at the minute plus 30-second point, except for time checks which are given to the nearest quarter minute.

j. *Miles* means nautical miles.

### 1-2-4. NOTES

Statements of fact of a prefatory or explanatory nature and relating to the use of procedural material have been identified and worded as "Notes."

### 1-2-5. ORDER CHANGES

a. Recommendations for procedural changes.

1. FAA. Facilities shall forward recommended changes to the respective regional office for review. The regional office will review the recommendation to determine if it merits further consideration. The regional office shall reject the proposal or forward it to FAA headquarters for further processing.

2. Military Service. Military units shall forward recommended changes through their respective chain of command for review. Military commands will review the recommendation, and if it merits further consideration, forward it to military headquarters. Military headquarters shall reject the proposal or forward copies of proposed order changes/additions to FAA headquarters for further processing.

b. Processing Changes. FAA headquarters will:

1. Consolidate all proposed changes and effect coordination with the appropriate military service(s) headquarters prior to circulation to FAA and military facilities for comments/recommendations.

2. After receipt of comments/recommendations, coordinate the final disposition with the military services prior to publication.

3. Compile and publish changes.

c. Interim Changes (Directive/GENOT/Notice).

1. Either the military services or the FAA may issue urgent interim procedures prior to publication in this order.

2. Prior to the implementation of urgent interim procedures, coordination shall be effected between the military services and FAA headquarters.

3. Copies of the message outlining the interim procedures/changes shall be transmitted to all military services and/or FAA headquarters.

4. Interim changes will be published in the next scheduled change to the order.

d. Page Markings. Revised, reprinted, or additional pages will be marked as follows:

1. Each revised or additional page will show the change number and effective date of the change.

2. Bold bars in the margin of the text will mark the location of substantive procedural, operational, or policy changes; i.e., when material which affects the performance of duty is added, revised, or deleted.

3. A reprinted page not requiring change will be reproduced in its original format with no change to the date or the change number.

#### **1-2-6. MILITARY PROCEDURES IDENTIFICATION**

A service abbreviation, USAF for U.S. Air Force, USA for U.S. Army, USMC for U.S. Marine Corps, and USN for U.S. Navy, denotes that the procedure immediately following the abbreviation only applies to the designated service.

#### **1-2-7. REQUIREMENTS REVIEW**

In the national interest and in consonance with Section 40101, Title 49 United States Code, the FAA and the military services will endeavor to develop common policy, procedures, and criteria for the conduct of military operations. To assist in this endeavor, the FAA will annually convene a working group consisting of representatives from the military services and FAA to review military requirements, procedures, and criteria for military operations.

a. FAA, ATO-1, shall:

1. Be responsible for the supervision and control of the program.

2. Serve as the central point for all correspondence.

3. Develop tentative agenda items and effect coordination with the military services.

4. Forward a completed agenda to each military service, prior to convening a workshop, to permit thorough study and familiarization.

5. Provide FAA headquarters/regional representation at the workshop.

b. The military service shall:

1. Forward comments, recommendations, and suggestions to FAA, ATO-1.

2. Forward proposed workshop agenda items to FAA, ATO-1.

3. Provide military representation at the workshop.

## Section 3. TERMS OF REFERENCE

### 1-3-1. ABBREVIATIONS

As used in this order, the abbreviations set forth below shall have the meanings indicated.

Abbreviation	Meaning
ACC	Air Combat Command
ACM	Air Combat Maneuvers
ACT	Air Combat Tactics
AD	Air Defense
ADCF	Air Defense Control Facility
ADIZ	Air Defense Identification Zone
ADLO	Air Defense Liaison Officer
ADMIS (number)	Aircraft Departing at (number of minutes/seconds) Intervals
AFE	Alert Force Evaluation
AFREP	Air Force Representative to the FAA
A/F	Airfile
AFIO	FAA Authorization For Interceptor Operations
AFSS	Automated Flight Service Station
AIM	Aeronautical Information Manual
AI RADAR	Airborne Intercept Radar
AIRFL	Air Refuel or Aerial Refueling
ALTRV	Altitude Reservation
ALTRV APREQ	Altitude Reservation Approval Request
ALTRV APVL	Altitude Reservation Approval
AMC	Air Mobility Command
AMIS	Aircraft Movement Information Service
ANG	Air National Guard
ANR	Alaskan NORAD Region
AOC	Aircraft Operations Center (NOAA)
APREQ	Approval Request
APVL	Approval
ARAC	Army Radar Approach Control
ARCP	Air Refueling Control Point
ARCT	Air Refueling Control Time
ARIP	Air Refueling Initial Point
ARTCC	Air Route Traffic Control Center
ARU	Airborne Radar Unit
AST	Air Sovereignty Test

Abbreviation	Meaning
ASW	Anti-Submarine Warfare
ATC	Air Traffic Control
ATCAA	ATC Assigned Airspace
ATCSCC	Air Traffic Control System Command Center
ATREP	FAA Air Traffic Representative
ATS	Air Traffic Service
ATSC	Air Traffic Services Cell
AVANA (UTC)	ALTRV Approval Void for Aircraft Not Airborne by (time)
AWACS	Airborne Warning and Control System
BFM	Basic Flight Maneuvers
BRL	Bomb Release Line
CANR	Canadian NORAD Region
CARCAH	Chief, Aerial Reconnaissance Coordination, All Hurricanes
CARF	Central Altitude Reservation Function
CARU	Canadian Altitude Reservation Unit
CELNAV	Celestial Navigation Training
CERAP	Combined Center/Approach Control
CFA	Controlled Firing Area
CINCNOAD	Commander in Chief, North American Aerospace Defense Command
CINCPAC	Commander in Chief, Pacific Air Forces
CMB	Climb
CMAFB/ADOC	Cheyenne Mountain Air Force Base/Air Defense Operations Center
CMPS	Compress
CNLG	Celestial Navigation Leg
CONPT	Control Point
CONR	CONUS NORAD Region
CONUS	Continental United States
CRAF	Civil Reserve Air Fleet
CTA	Control Area
CTA/FIR	U.S. Control Airspace/Flight Information Region
DAJP	Departure Adjustment Point
DARR	Department of the Army Regional Representative to the FAA
DCM	Defensive Combat Maneuvers
DCS	Defense Communications System
DNA	Defense Nuclear Agency

Abbreviation	Meaning
DOD	Department of Defense
DOLLY	Data Link
DPRT	Departure or Depart
DRCT	Direct
DSN	Defense Switched Network
DSND	Descend
DVFR	Defense Visual Flight Rules
EAC	Expected Approach Clearance Time
ECCM	Electronic Counter Counter Measures
ECM	Electronic Counter Measures
EEP	End Exercise Point
EFAS	En Route Flight Advisory Service
EFC	Expect Further Clearance
EFTO	Encrypt For Transmission Only
ENCAN	Enter Canadian Airspace
ENDAR	End Aerial Refueling
ENJJPT	Euro-NATO Joint Jet Pilot Training
ETA	Estimated Time of Arrival
ETD	Estimated Time of Departure
ETE	Estimated Time En Route
EUCARF	European Central Altitude Reservation Facility
EWO	Emergency War Order
EXCAN	Exit Canadian Airspace
FAA	Federal Aviation Administration
FACSFAC	Fleet Area Control and Surveillance Facility
FAR	Federal Aviation Regulations
FGHQ	Fighter Group Headquarters (Canada)
FIR	Flight Information Region
FLIP	Flight Information Publication
FREQ	Frequency
FRMN	Formation
FSDO	Flight Standards District Office
FSS	Flight Service Station
GCA	Ground Controlled Approach
GCI	Ground Controlled Intercept
HADS	Hawaii Air Defense Sector
HHCL	H Hour Control Line
HIROCC	Hawaii Region Operations Control Center
IBASF (number)	Interval Between Aircraft in Stream Formation is (minutes)

Abbreviation	Meaning
IBCSF	Interval Between Cells in Stream Type Formation (normally expressed in minutes)
ICAO	International Civil Aviation Organization
IFF/SIF	Identification Friend or Foe/Selective Identification Feature
IFPPF	Individual Flight Plan From This Point
IFR	Instrument Flight Rules
IFSS	International Flight Service Station
IMC	Instrument Meteorological Conditions
IP	Initial Point
IR	IFR Military Training Route
JCS	Joint Chiefs of Staff
KIAS	Knots Indicated Air Speed
LABS	Low Altitude Bombing System
LANTIRN	Low Altitude Navigation and Targeting Infrared for Night
LATN	Low Altitude Tactical Navigation
LOA	Letter of Agreement
LOWAT	Low Altitude Air-to-Air Training
LRDT	Long Range Defense Team
LVLOF	Level Off
MARSA	Military Authority Assumes Responsibility for Separation of Aircraft
MEA	Minimum En Route IFR Altitude
MISG	Missing
MITO	Minimum Interval Takeoff
MNVR	Maneuver
MOA	Military Operations Area
MOCA	Minimum Obstruction Clearance Altitude
MSLG	Missile Alignment/Programming Leg
MTR	Military Training Route
NADIN	National Airspace Data Interchange Network
NAS	National Airspace System
NAVREP	Navy Representative to the FAA
NHOP	National Hurricane Operations Plan
NIMA	National Imagery & Mapping Agency
NOAA	National Oceanic and Atmospheric Administration
NOPAR	Do Not Pass to Air Defense Radar
NORAD	North American Aerospace Defense Command
NUDET	Nuclear Detonation

Abbreviation	Meaning
NWSOP	National Winter Storm Operations Plan
OG	Operations Group Commander
ORI	Operational Readiness Inspection
OSS/CC	Operations Support Squadron Commander
PACAF	Pacific Air Forces
PACCS	Post Attack Command and Control System
PACMARF	Pacific Military Altitude Reservation Facility
PADRA	Pass to Air Defense Radar
PIAD	Pacific Island Air Defense
PIADR	Pacific Islands Air Defense Region
PIT	Pilot Instructor Training
POCC	Pacific Operations Control Center
PTC	Positive Target Control
RAPCON	Radar Approach Control Facility Associated with the United States Air Force
RATCF	Radar Air Traffic Control Facility Associated with the United States Navy
RAVEC	Radar Vector to a Geographical Point
RBS	Radar Bomb Scoring
RCVR	Receiver Aircraft for Air Refueling
RDT&E	Research, Development, Test, and Evaluation
REMES	Reference Message
RNAV	Area Navigation
RNDZ	Rendezvous
RNWY	Runway
ROCC	Region Operations Control Center
ROMES	Reference Our Message
RPV	Remotely Piloted Vehicle
RSVN	Reservation
RTB	Return To Base
RTE	Route
RUMES	Reference Your Message
RZPT	Rendezvous Point
SADL	Scramble At Deployed Location
SAMS	Special Use Airspace Management System
SARDA	State and Regional Disaster Airlift

Abbreviation	Meaning
SCATANA	Security Control of Air Traffic and Navigational Aids
SD	Senior Director
SFA	Single Frequency Approach
SFO	Simulated Flameout
SIDOR	Standard Instrument Departure from Optimum Runway
SOCC	Sector Operations Control Center
SODAR	Simultaneous Opposite Direction Aerial Refueling
SPADE	Special Penetration Air Defense Exercise
SQDN	Squadron
STAR	Standard Terminal Arrival Route
TACS	Theater Air Control System
TAS	True Airspeed
TFR	Terrain Following Radar
TKOF	Takeoff
TNKR	Tanker
UFT	Undergraduate Flying Training
UNT	Undergraduate Navigator Training
UPT	Undergraduate Pilot Training
USAF	United States Air Force
USCINCPAC	U.S. Commander in Chief Pacific Command
USMC	United States Marine Corps
USN	United States Navy
USPACOM	U.S. Pacific Command.
UTC	Coordinated Universal Time
VCSL	Voice Call Sign List
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
VR	VFR Military Training Route
WAO	Weapons Assignment Officer
WC	Weapons Controller
WD	Weapons Director
WX RECON	Weather Reconnaissance
XPND	Expand

## 1-3-2. DEFINITIONS

### A-DEFINITIONS

Active Air Defense Mission. One or more aircraft, which in the interest of national security or flight safety, are employed for the purpose of recognition and determination of the intentions of an airborne object.

Air Combat Maneuvers (ACM). One or a combination of basic ACT flight maneuvers calculated to provide an offensive tactical advantage over another aircraft.

Air Combat Tactics (ACT). Flight involving basic flight maneuvers, air combat maneuvers, or defensive combat maneuvers, singly or in combination.

Air Defense Control Facility (ADCF). A military radar unit (ROCC/SOCC/AWACS) primarily used for air defense, including air-sovereignty and counter-drug operations. ADCF's are the only MRU's authorized to direct interceptors.

#### NOTE-

*Specifically designated military units, when identified, may provide augmentation for NORAD and function as ADCF's.*

Air Defense Emergency. A military emergency condition declared by a designated authority. This condition exists when an attack upon the continental United States, Alaska, Canada, or U.S. installations in Greenland by hostile aircraft or missiles is considered probable, is imminent, or is taking place. (Refer to the AIM).

Air Defense Identification Zone (ADIZ). The area of airspace over land or water, extending upward from the surface, within which the ready identification, the location, and the control of aircraft are required in the interest of national security.

a. Domestic Air Defense Identification Zone. An ADIZ within the United States along an international boundary of the United States.

b. Coastal Air Defense Identification Zone. An ADIZ over the coastal waters of the United States.

c. Distant Early Warning Identification Zone (DEWIZ). An ADIZ over the coastal waters of the State of Alaska. ADIZ locations and operating and flight plan requirements for civil aircraft

operations are specified in CFR 14 part 99. (Refer to the AIM.)

Air Refueling Control Point (ARCP). The geographical point over which the receiver arrives in the observation/refueling position with respect to the assigned tanker.

Air Refueling Initial Point (ARIP). The geographical point at which the receiver aircraft enters the refueling track/anchor, initiates radio contact with the tanker, and begins maneuver to rendezvous.

Air Route Traffic Control Center (ARTCC). A facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace and principally during the en route phase of flight. When equipment capabilities and work load permit, certain advisory/assistance services may be provided to VFR aircraft.

Air Sovereignty Test (AST). An aircraft on a NOPAR flight plan or ALTRV that is designed to test the detection, identification, and reporting functions of the air defense forces (ADCF and interceptor/fighter units).

Air Traffic Clearance (Clearance). An authorization by air traffic control, for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace.

Air Traffic Control (ATC). A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic.

Air Traffic Control Service (Control). (See Air Traffic Control.)

Airborne Order. A command and authorization for flight to become airborne with takeoff at a specified time.

Airborne Radar Unit (ARU). An airborne radar unit used as an extension of a military radar unit during planned exercises and daily training missions.

Airborne Warning and Control System (AWACS). An airborne military radar unit engaged in radar surveillance and/or control of aircraft for the purpose of training, exercise, air defense, and counter-drug operations.



**Aircraft Movement Information Service (AMIS).** Service provided by an air route traffic control center, established by the Federal Aviation Administration, to provide for the acquisition, processing, and dissemination of aircraft movement information for use by the air defense facilities, whether or not such air defense facilities are associated with an Air Defense Identification Zone (ADIZ). Such information pertains to friendly aircraft and airborne objects which are or will be operating in the air defense facility(ies) area(s).

**Alaskan NORAD Region (ANR).** (See NORAD Region).

**Alert Area.** Special use airspace which may contain a high volume of pilot training activities or an unusual type aerial activity, neither of which is hazardous to aircraft. Alert Areas are depicted on aeronautical charts for the information of nonparticipating pilots. All activities within an Alert Area are conducted in accordance with Federal Aviation Regulations, and all pilots transiting the area are equally responsible for collision avoidance.

**Alert Force Evaluation (AFE).** A higher headquarters evaluation of a unit's active air and scramble capability. (A 72-hour notice to the appropriate ARTCC is required.)

**Alternate Entry Track.** A track along which en route descent is made to an intermediate point on an MTR.

**Alternate Penetration Fix.** The fix from which the MTR Alternate Entry Track begins. This fix shall be described by reference to a ground-based navigational aid.

**Alternate Route (AR).** A preplanned departure track designed to allow receivers to depart in one direction and tanker support to depart in another direction from the same airport with the intent to rendezvous for scheduled air refueling.

**Altitude Reservation (ALTRV).** Airspace utilization under prescribed conditions normally employed for the mass movement of aircraft or other special user requirements which cannot otherwise be accomplished. ALTRV's are approved by the appropriate air traffic facility or the Central Altitude Reservation Function (CARF).

**Amber Warning.** A term that postures (prepares and/or positions) aircraft prior to being launched for survival. It may precede a flush order.

**Anchor Area.** A defined area encompassing both a racetrack shape aerial refueling track and its protected airspace.

**Anchor Point.** A designed reference point upon which an anchor refueling track is oriented.

**Associated Tracks.** MTR Alternate Entry, Primary Entry, Climb-out, and Re-entry tracks.

**ATC Assigned Airspace (ATCAA).** Airspace of defined vertical/lateral limits, assigned by ATC, for the purpose of providing air traffic segregation between the specified activities being conducted within the assigned airspace and other IFR air traffic.

**AVANA.** (ALTRV APVL void for aircraft not airborne by (time)) used by ATC to advise an aircraft that the ALTRV is automatically canceled at a specified time.

## **B-DEFINITIONS**

**Basic Flight Maneuvers (BFM).** The maneuvers in which ACT pilots must be skilled in order to effectively employ weapons systems in air combat maneuvers or defensive combat maneuvers.

**Bent.** Equipment indicated inoperative or unserviceable.

**Big Photo.** The general call for aircraft performing ECM.

**Branch Route (BR).** A track of an ALTRV that is defined from the breakaway point from a common route to the next fix or the final destination.

**Burner.** (USAF) Fly at maximum power.

## **C-DEFINITIONS**

**Canadian Altitude Reservation Unit (CARU).** A unit established by the Ministry of Transport of Canada responsible for the processing of altitude reservation requests in Canadian airspace.

**Canadian NORAD Region (CANR).** (See NORAD Region).

**Cardinal Altitudes or Flight Levels.** "Odd" or "even" thousand-foot altitude or flight levels; e.g., 5,000, 6,000, FL 250, FL 260, FL 270.

Cat Track. Aircraft Movement Information Service provided by an air route traffic control center on all instrument flight rules flight plan aircraft classified as NORAD special interest flights, and those flights specified in paragraph 5-4-3 via voice reporting over interphone circuits in lieu of the ROCC/SOCC teletypewriter network.

Cell Formation. A non-standard formation of two or more aircraft with the same intended route of flight, maintaining station keeping operations by visual/electronic means.

Central Altitude Reservation Function (CARF). A function of the Air Traffic Control System Command Center (ATCSCC), established to conduct the volume of coordination, planning, and approval of special user requirements under the ALTRV concept.

Chief, Aerial Reconnaissance Coordination, All Hurricanes (CARCAH). The liaison between the 53 WRS (call sign "TEAL"/WX RECON) aircraft and either the National Hurricane Center or the National Centers for Environmental Prediction.

Climb-out Fix. The point in space where en route operation is resumed after climb-out from an MTR. This fix shall be described by reference to a ground-based navigational aid.

Climb-out Track. An MTR Associated Track beginning at the route Exit Point and permitting a climbing departure from the Exit Point to the Climb-out Fix.

Common Route (CR). The receivers planned common route in an ALTRV from point of departure to destination excluding branch route or other join-up tracks.

Continental United States NORAD Region (CONR). (See NORAD Region).

Control Area Extension. Designated airspace over the high seas within which the U.S. has accepted the responsibility of providing air traffic services. This service is provided in a manner consistent with that adopted for airspace under its domestic jurisdiction. While state aircraft may operate on a "due regard" basis in such areas, it is the Department of Defense policy to comply with the provisions of such service to the extent that the military mission permits.

Controlled Airspace. An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

**NOTE-**

*Controlled airspace is a generic term that covers Class A, Class B, Class C, Class D, and Class E airspace.*

Controlled Firing Area (CFA). Special use airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons and property on the ground.

Correlation Area. The airspace over a specific geographical area in which NORAD, PACAF, or PIAD Region Operations Control Centers have the responsibility for air defense.

Correlation Fix. A fix used for flight plan correlation.

Correlation Line. A reference line established by the NORAD, PACAF, or PIAD Region/Sector Commander from which penetration or time-over for a flight is computed for the purpose of flight plan correlation.

**D-DEFINITIONS**

DD-175/DD-1801. A (domestic/international) military flight plan.

Data Link (DOLLY). A ground-to-air communications system which transmits information via digital coded pulses.

Defense Area. Airspace of the U.S. other than airspace designated as an ADIZ within which the ready control of aircraft is required in the interest of national security during an Air Defense Emergency or Defense Emergency.

Defense Emergency. A condition declared by the Commander of a United States unified or specified command (other than CINCNORAD), or by higher authority, confirming an overt attack of any type upon the United States or a major attack on U.S. forces overseas or on allied forces in any theater of operation.

Defense Visual Flight Rules (DVFR). Rules applicable to flights within an ADIZ conducted under the visual flight rules in 14 CFR part 91. (See Air Defense Identification Zone.) (Refer to 14 CFR part 99.)

Defensive Combat Maneuvers (DCM). One or a combination of basic ACT flight maneuvers calculated to provide a defensive position of advantage over another aircraft with offensive intent.

Diversion Airport. An airport outside major metropolitan areas or likely target complexes.

Due Regard. A phase of flight wherein a State operated aircraft assumes responsibility to separate its aircraft from all other aircraft. DOD operators must comply with DOD's regulations concerning "due regard."

### ***E-DEFINITIONS***

Egress Point. The geographical point at which the refueling track terminates.

Electronic Counter Counter Measures (ECCM). Actions taken to insure effective use of the electromagnetic spectrum despite the employment of ECM. It includes the use of ECCM receivers/videos which may effectively reduce the radar degradation induced by certain types of ECM.

Electronic Counter Measures (ECM). Electronic radiation or chaff dispensing activities with the object of impairing (electronic jamming) the use of electronic devices, equipment, systems or with the intent to mislead (electronic deception) the user in the interpretation or use of information by his electronic system.

End Exercise Point (EEP). The point at which an aircraft is no longer classified as a faker. Ground target, bomb release line (BRL), or final neutralization in the strike route portion of the mission as appropriate.

Entry Point. A point which denotes the beginning of a particular route of flight; i.e., MTR.

European Central Altitude Reservation Facility (EUCARF). A USAF facility established for the purpose of processing altitude reservations within its area of responsibility.

Exercise Flush. The phraseology used for testing flush operations. NORAD has a requirement to practice these procedures. Actual flush procedures are classified.

Exercise Route. The route of flight to be flown by strike force aircraft from departure to point of recovery.

Exit Point. A point which denotes the end of a particular route of flight; i.e., MTR, air refueling track, etc.

### ***F-DEFINITIONS***

FAA Authorization for Interceptor Operations (AFIO). An authority used for the movement of interceptors under NORAD operational jurisdiction while on an active air defense mission when it is determined by competent military authority that operations within the NAS would significantly derogate the mission.

Faker. A strike force aircraft simulating a hostile during an air defense exercise while in the strike route portion of the mission; i.e., IP/HHCL to ground target BRL/EEP.

Faker Monitor. Military personnel responsible for monitoring the progress and providing safety to faker aircraft in accordance with safe intercept criteria, beginning at the IP/HHCL and terminating at the BRL/EEP or at the point of final neutralization.

Fleet Area Control and Surveillance Facility (FACSFAC). A U.S. Navy fixed ground facility which manages offshore and inland operating areas including warning areas, restricted areas, and other assigned airspace.

Flight Level (FL). A level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Each is stated in three digits that represent hundreds of feet. For example, flight level 250 represents a barometric altimeter indication of 25,000 feet; flight level 255, an indication of 25,500 feet.

Flight Plan. Specified information relating to the intended flight of an aircraft that is filed with a AFSS/FSS or an ATC facility. (Refer to the AIM.)

Flush. A term that launches military aircraft in a minimum time.

Formation Flight. More than one aircraft which, by prior arrangement between the pilots, operate as a single aircraft with regard to navigation and position reporting. Separation between aircraft within the formation is the responsibility of the

flight leader and the pilots of the other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control and during join up and breakaway.

a. A standard formation is one in which a proximity of no more than 1 mile laterally or longitudinally and within 100 feet vertically from the flight leader is maintained by each aircraft.

b. Nonstandard formations are those operating under any of the following conditions:

1. When the flight leader has requested and ATC has approved other than standard formation dimensions.

2. When operating within an authorized ALTRV or under the provisions of a letter of agreement.

3. When the operations are conducted in airspace specifically designated for a special activity. (Refer to 14 CFR part 91.)

### **G-DEFINITIONS**

Ground Target. Destruct objective of a faker aircraft.

### **H-DEFINITIONS**

Hand-off Point (HOP). The point with which an aircraft's position is correlated when transferring target identity during a radar hand-off. When using nonradar procedures, the HOP is the time/fix/altitude where control responsibility is transferred unless otherwise specified.

Hawaii Air Defense Sector (HADS). A geographical subdivision of the PIADR.

High Seas. That area of the international waters commencing 12 nautical miles from the land mass.

### **I-DEFINITIONS**

IFR Military Training Routes (IR). Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training in both IFR and VFR weather conditions at airspeeds in excess of 250 KIAS below 10,000 feet MSL.

Initial Point/H-Hour Control Line (IP/HHCL). That point at which the faker route portion of the exercise begins.

Intercept. The encounter with or tracking of an airborne object, normally as a result of a flight path preplanned to effect such encounter in the shortest practicable time.

Interceptor. An airplane engaged for the sole purpose of performing an intercept.

Interceptor Training Flight. The flight of one or more aircraft for the development and maintenance of proficiency for both air and ground components related to the intercept mission.

### **J-DEFINITIONS**

Jamming. Electronic or mechanical interference which may disrupt the display of aircraft on radar or the transmission/reception of radio communications/navigation.

### **L-DEFINITIONS**

Large Scale ECM Mission. ECM performed by seven or more aircraft working as a unit.

Long Range Defense Team (LRDT). A composite air defense force normally consisting of an AWACS, tanker, and fighter/interceptor aircraft.

Low Altitude Air to Air Training (LOWAT). Maneuvers within MTR's for the purpose of simulating an aerial attack and defensive response.

Low Altitude Tactical Navigation (LATN) Area. A large geographic area where random low altitude operations are conducted at airspeeds below 250 KIAS.

### **M-DEFINITIONS**

Maneuver Area. A designated area within an MTR where aircraft may deviate within the corridor to perform operational requirements.

Military Authority Assumes Responsibility for Separation of Aircraft (MARSA). A condition whereby the military services involved assume responsibility for separation between participating military aircraft in the ATC system. It is used only for required IFR operations which are specified in letters of agreement or other appropriate FAA or military documents.

Military Operations Area (MOA). Special use airspace of defined vertical and lateral dimensions

established outside Class A airspace to separate/segregate certain nonhazardous military activities from IFR traffic in controlled airspace and to identify for VFR traffic where these activities are conducted.

**Military Radar Unit (MRU).** Any fixed or mobile ground-based unit under the operational jurisdiction of the military services excluding commissioned ATC facilities. This includes the AWACS aircraft when it meets the requirements of this order. MRU's will provide services in accordance with the letter of agreement with the appropriate ATC facilities; however, MRU's shall not provide ATC services.

**Military Training Route (MTR).** Routes developed for use by the military for the purpose of conducting low-altitude, high-speed training.

**Minimum Communications (MINCOMM).** A procedure whereby air traffic control information is exchanged between aircrews and air traffic facilities in accordance with a pre-arranged memorandum of understanding (MOU).

**Minimum En Route IFR Altitude (MEA).** The lowest published altitude between radio fixes which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. The MEA prescribed for an airway or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route.

**Minimum Navigational Performance Standards (MNPS).** A specified set of minimum navigational performance standards which aircraft must meet in order to operate in MNPS-designated airspace. This is to ensure safe operation of aircraft through reduced separation standards resulting from the improvement in accuracy of enhanced navigational equipment.

**Missile Attack Warning.** The phraseology used for actual flush operations.

**Mode.** The letter or number assigned to a specific pulse spacing of radio signals transmitted or received by ground interrogator or airborne transponder components of the Air Traffic Control Radar Beacon System (ATCRBS). Mode A

(military Mode 3) and Mode C (altitude reporting) are used in air traffic control. (Refer to the AIM.)

**Moving Reservation.** ALTRV's which encompass en route activities and advance coincident with the mission progress.

## **N-DEFINITIONS**

**NORAD Command and Control Identifiers (CCI's).** CCI's are the method by which the NORAD air defense system reports command and control structure within the regions. CCI's include command location and tactical control source. The tactical control source is the facility/facilities providing tactical control.

**NORAD Region.** A geographical subdivision of the area for which NORAD is responsible.

**NORAD Sector.** A geographical subdivision of a NORAD region.

**Notice to Airmen (NOTAM).** A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, procedure, or hazard) of the National Airspace System, the timely knowledge of which is essential to personnel concerned with flight operations.

a. NOTAM(D). A NOTAM given (in addition to local dissemination) distant dissemination via data communications equipment beyond the area of responsibility of the Flight Service Station. These NOTAM's are stored and repeated hourly until canceled.

b. NOTAM (L). A NOTAM given local dissemination by voice, data communication equipment, and a wide variety of means such as: telautograph, teleprinter, facsimile reproduction, hot line, telecopier, telegraph, and telephone to satisfy local user requirements.

c. FDC NOTAM. A NOTAM, regulatory in nature, transmitted by the National Flight Data Center (NFDC) and given all-circuit dissemination.

**Nuclear Weapon Accident (Broken Arrow).** An unexpected event involving nuclear weapons or nuclear components which results in any of the following:

a. Accidental or unauthorized launching, firing, or use by U.S. force or U.S. supported

Allied forces, or a nuclear capable weapon(s) system which could create the risk of outbreak of war.

- b. Nuclear detonation.
- c. Nonnuclear detonation/burning of a nuclear weapon.
- d. Radioactive contamination.
- e. Seizure, theft, or loss of a nuclear weapon or nuclear component including jettisoning.
- f. Public hazard, actual or implied.

## **O-DEFINITIONS**

Oceanic Route. Routes generally depicted on position reporting charts to facilitate flight planning and position reporting while conducting flight in ICAO oceanic control areas.

Offset Point. A point in space relative to a target's path toward which an interceptor is vectored or from which the final attack heading or turn is made.

Offshore Controlled Airspace. Designated airspace over the high seas within which the U. S. has accepted the responsibility of providing air traffic services. This service is provided in a manner consistent with that adopted for airspace under U.S. jurisdiction.

Open Skies. A treaty based on complete territorial openness, addressing the use of unarmed observation aircraft with sensors, and annual quotas of observation flights which each State Party is willing to accept, and entitled to conduct. Open Skies aircraft shall take priority over any regular air traffic.

## **P-DEFINITIONS**

PACAF Region. A geographical subdivision of the area for which PACAF is responsible.

Pacific Air Forces (PACAF). Both a USAF Major Command and the Air Component of the Unified U.S. Pacific Command (USPACOM).

Pacific Island Air Defense Region (PIADR). A geographical subdivision of the USPACOM area for which the Air Component Commander is responsible for air defense.

Pacific Military Altitude Reservation Facility (PACMARF). A USAF facility established for

the purpose of coordinating altitude reservations within its area of responsibility.

Partial Route (PR). A track of an ALTRV that begins at the international boundary for aircraft inbound from an international airport to the CONUS or a track that is connected to a DD-175/DD-1801 (domestic flight plan).

Participating Aircraft. Only those aircraft engaged in, and a part of, the activity being conducted.

Penetrating Traffic. Traffic whose protected airspace, as defined in pertinent regulations, infringes upon another authority's area of jurisdiction or responsibility when measured from the center line of the route of flight or the edge of a stationary ALTRV boundary

Photo Reconnaissance (PHR). Military activity that requires locating individual photo targets and navigating to the targets at a preplanned angle and altitude. The activity normally requires a lateral route width of 16 NM and an altitude range of 1,500 feet to 10,000 feet AGL.

Positive Target Control (PTC). The operation of faker aircraft transponders on discrete Mode 3/A codes to satisfy Air Defense faker monitor and ATC requirements.

Prefiled Flight Plan. A flight plan on file in an FAA facility to provide for point-to-point operations of a recurring nature or quick reaction deployment missions. This type flight plan will normally include permanent type data, such as route, with a special mission designation when required.

Primary Entry Track. A track along which en route descent is made to the entry point of an MTR.

Primary Penetration Fix. The fix from which the Primary Entry Track of an MTR begins. This fix shall be described by reference to a ground-based navigational aid.

Prohibited Area. Airspace designated under 14 CFR part 73 within which no person may operate an aircraft without the permission of the using agency.

## **R-DEFINITIONS**

Radar Advisory. The provision of advice and information based on radar observations.

### Radar Contact.

a. Used to inform an aircraft that it is identified on the radar display and radar flight following will be provided until radar identification is terminated. Radar service may also be provided within the limits of necessity and capability. When a pilot is informed of "radar contact" by ATC, the pilot automatically discontinues reporting over compulsory reporting points.

b. The term an air traffic controller uses to inform the transferring controller that the target being transferred is identified on the radar display. (See Radar Service.) (Refer to the AIM.)

Radar Flight-Following. The observation of the progress of radar identified aircraft, whose primary navigation is being provided by the pilot, wherein the controller retains and correlates the aircraft identity within the appropriate target or target symbol displayed on the radar scope. (See Radar Contact, Radar Service.) (Refer to the AIM.)

Radar Hand-off. That action whereby radar identification of an aircraft is made known from one controller to another.

Radar Identification. The process of ascertaining that an observed radar target is the radar return from a particular aircraft. (See Radar Contact, Radar Service.)

Radar Service. A term which encompasses one or more of the following services based on the use of radar which can be provided by a controller to a radar identified aircraft.

a. Radar Separation. Radar spacing of aircraft in accordance with established minima.

b. Radar Navigational Guidance. Vectoring aircraft to provide course guidance.

c. Radar Monitoring. The radar flight-following of aircraft, whose primary navigation is being performed by the pilot, to observe and note deviations from its authorized flight path, airway, or route. When being applied specifically to radar monitoring of instrument approaches; i.e., with precision approach radar (PAR) or radar monitoring of simultaneous ILS approaches, it includes advice and instructions whenever an

aircraft nears or exceeds the prescribed PAR safety limit or simultaneous ILS no transgression zone.

Radar Traffic Advisories. Advisories issued to alert pilots to known or observed radar traffic which may affect the intended route of flight of their aircraft. (See Traffic Advisories.)

Recovery. Penetration and approach of aircraft.

Re-entry Track. An associated track commencing from a defined point on an MTR from which low-level re-entry can be achieved for the purpose of executing additional runs through segments of an MTR.

Refueling Level. A block of consecutive altitudes/flight levels from ARIP to exit point within which entry into the refueling track, maneuvering to rendezvous, and transfer of fuel will be accomplished.

Regional Operations Control Center (ROCC). A NORAD facility tasked to manage air defense operations in a designated area within the NORAD area of operations. (Alaskan ROCC also functions as a NORAD sector operations control center-SOCC.)

Remotely Piloted Vehicle (RPV). A pilotless aircraft including drones which is remotely controlled by an external source either airborne or on the surface.

Rendezvous. A planned arrival of two or more aircraft over a predetermined point terminating in a visual contact prior to effecting a refueling hook-up or conducting other activities requiring proximate operations.

Reporting Point. A geographical location in relation to which the position of an aircraft is reported. (Refer to the AIM.)

Restricted Area. Special use airspace designated under 14 CFR part 73 within which the flight of aircraft, while not wholly prohibited, is subject to restriction.

### **S-DEFINITIONS**

Scramble. Departure of an aircraft training for or for the purpose of participating in an air defense mission.

Scramble Order. A command and authorization for flight requiring time, of not more than 5 minutes, to become airborne.

**Search and Rescue (SAR).** A service which seeks missing aircraft and assists those found to be in need of assistance. It is a cooperative effort using the facilities and services of available federal, state, and local agencies. The U.S. Coast Guard is responsible for coordination of search and rescue for the Maritime Region, and the U.S. Air Force is responsible for search and rescue for the Inland Region. Information pertinent to search and rescue should be passed through an air traffic facility or be transmitted directly to the Rescue Coordination Center by telephone.

**Sector Operations Control Center (SOCC).** A military radar unit which has the capability to regulate air defense operations in a designated area. This is a subordinate unit of a ROCC.

**Select Code.** That code displayed when the ground interrogator and the airborne transponder are operating on the same mode and code simultaneously.

**Separation Minima.** The minimum longitudinal, lateral, or vertical distances by which aircraft are spaced through the application of air traffic control procedures.

**Slow Route (SR).** Low-level route(s) at or below 1,500 AGL and at 250 KIAS or less. SR's are published in the Flight Information Publication (FLIP) AP/1B.

**Special Handling.** Clear the aircraft according to pilot request as soon as practicable. Do not ask the pilot to deviate from the planned action except to preclude an emergency situation.

**Special Penetration Air Defense Exercise (SPADEF).** A no-notice exercise in which an aircraft on a NOPAR flight plan or ALTRV tests the detection, identification, and reporting functions of the air defense forces (ADCF's and interceptor/flight units).

**Special Use Airspace.** Airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature, and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Types of special use airspace:

- a. Alert Area.
- b. Controlled Firing Area.

c. Military Operations Area.

d. Prohibited Area.

e. Restricted Area.

f. Warning Area.

**Stationary Reservations.** Altitude reservations which encompass activities in a fixed area. Stationary reservations may include activities such as special tests of weapons systems or equipment, certain U.S. Navy carrier, fleet, and anti-submarine operations, rocket, missile and RPV operations, and certain aerial refueling, or similar operations.

**Stereo-route.** Pre-coordinated route of flight which may be stored in the ARTCC/CERAP computer.

**Stop Stream/Burst/Buzzer.** Used by ATC to request a pilot to suspend electronic countermeasure activity.

**Stream Formation.** Two or more aircraft or cells of aircraft operating on the same route with more than one (1) minute but not more than 15 minutes longitudinal spacing between aircraft (or cells), laterally contained within the route width to be protected, and utilizing normally 3,000 consecutive feet of altitude.

**Strike Force Aircraft.** All offensive attack and support forces participating in an exercise.

**Strike Route.** That portion of the exercise routes from IP/HHCL to ground target, bomb release line, end of exercise point, as appropriate.

**Synoptic Surveillance.** Weather reconnaissance mission flown to provide mid- and/or upper-tropospheric sounding data on the periphery of tropical systems in data-sparse areas. Synoptic flights better define the upper atmosphere and aid in the prediction of tropical cyclone motion and intensity.

## **T-DEFINITIONS**

**Tactical Phase.** That portion of a mission which includes the positioning of aircraft and the execution of an actual or practice flight against hostile aircraft or targets.

**Tanker Orbit Point.** A geographical location along the planned refueling track where the tanker may hold prior to effecting rendezvous with the receiver aircraft.



Terrain Following (TF). The flight of a military aircraft maintaining a constant AGL altitude above the terrain or the highest obstruction. The altitude of the aircraft will constantly change with the varying terrain and/or obstruction.

Theater Air Control System (TACS). TACS is an Air Force system composed of various ground and airborne command and control elements that plan and direct combat operations through centralized command, decentralized execution. TACS air defense radar elements include the Control Reporting Center (CRC), the Control and Reporting Element (CRE), and AWACS.

Traffic Advisories. Advisories to alert pilots to other known or observed air traffic which may be in such proximity to the position or intended route of flight of their aircraft to warrant their attention. Such advisories may be based on:

- a. Visual observation.
- b. Observation of radar identified and nonidentified aircraft targets on an ATC radar display; or
- c. Verbal reports from pilots or other facilities.

#### **U-DEFINITIONS**

Uncontrolled Airspace. Class G airspace.

United States. The States, the District of Columbia, Puerto Rico, and the possessions, including the territorial waters and the airspace of these areas.

U.S. Pacific Command (USPACOM). A unified command whose area of responsibility extends from the west coast of Americas to the east coast of Africa and from the Arctic to the Antarctic.

#### **V-DEFINITIONS**

VFR Military Training Routes (VR). Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training under VFR at airspeeds in excess of 250 KIAS below 10,000 feet MSL.

Voice-Page Hot Line Communications. Point-to-point landline communications, terminating in monitor speakers, so that direct voice access is available without the need for dial-up action.

#### **W-DEFINITIONS**

Warning Area. A warning area is airspace of defined dimensions, extending from 3 nautical miles outward from the coast of the United States, that contains activity that may be hazardous to nonparticipating aircraft. The purpose of such warning areas is to warn nonparticipating pilots of the potential danger. A warning area may be located over domestic or international waters or both.

Weather Reconnaissance (WX RECON). Missions flown by the 53 WRS under the TEAL call sign for the purpose of gathering meteorological data from specific millibar levels in both tropical and winter weather systems.

Whiskey Alert. A term used over a voice-page hot line to alert a controlling agency that a spill out situation is imminent.

## Section 4. ATC SERVICES BY THE MILITARY

### 1-4-1. WHERE SERVICE MAY BE PROVIDED

The military may provide airport traffic control service at airports not served by an FAA or private civil tower.

### 1-4-2. APPROACH CONTROL AUTHORITY

The regional AT division may delegate air traffic control authority, at a location not served by an FAA facility, to a military ATC facility certified to provide air traffic services.

### 1-4-3. FREQUENCY REQUIREMENTS

Approach control authority shall not be delegated to the military until the facility is equipped to transmit and receive on all frequencies necessary to control all categories of IFR traffic, (including civil), operating on a regular basis in the terminal area.

### 1-4-4. LETTERS OF AGREEMENT (LOA)

LOA's shall be consummated between the military approach control facility and appropriate FAA facilities in accordance with established practice.

### 1-4-5. TOWER EN ROUTE CONTROL SERVICE

Tower en route control procedures, stated in an LOA, may be implemented between an FAA-operated terminal area traffic control facility and a military-operated approach control facility if an FAA Air Traffic Representative (ATREP) or Air Traffic Control Specialist designated by the regional AT division has certified that military personnel involved are qualified. This tower en route control service includes traffic to and from an airport which is served by a non-FAA facility if all en route control is exercised by a designated FAA approach control facility or a military facility that has been properly certified.

### 1-4-6. EVALUATION BY THE AIR TRAFFIC DIVISION

At locations not served by an ATREP, qualified AT division personnel/designated representative shall evaluate annually the military approach control

facility, military tower if located on a joint-use airport, and military ground controlled approach (GCA) unit if associated with a nonradar approach control tower. The intent of the evaluation is to determine that:

a. Equipment performance and staffing are adequate for the service being provided.

b. Personnel qualifications and performance meet acceptable standards.

c. Procedures utilized are consistent with LOA's between the ARTCC/CERAP and the appropriate local military authority and local memorandum of agreement between the FAA and appropriate military authority.

d. All deficiencies which may affect flight safety shall be reported to the cognizant military authority for timely corrective action.

### 1-4-7. SUSPENDING APPROACH CONTROL AUTHORITY

The ATREP, (or AT division personnel/designated representative), shall notify the appropriate military authority of any deficiency in the requirements stated in paragraph 1-4-6 for corrective action. He/she shall suspend approach control authority, if necessary, in the interest of safety.

a. In the absence of an ATREP, the center concerned shall suspend approach control authority if this is in the interest of safety. When this action has been taken, inform the ATREP, his alternate, or the AT division during office hours.

b. The commanding officer (or designated representative) of the affected military installation shall be notified prior to the time suspension action is taken and informed of the reason therefore.

### 1-4-8. USE OF MILITARY AUTHORITY ASSUMES RESPONSIBILITY FOR SEPARATION OF AIRCRAFT (MARSA)

The application of MARSA is a military service prerogative and will not be invoked by individual units or pilots except as follows:

a. Military service commands authorizing MARSA shall be responsible for its implementation and terms of use. When military operations

warrant an LOA and MARSA will be applied, the authority to invoke MARSA shall be contained in the LOA. It must be noted that an LOA will not be required in all cases involving MARSA.

b. ATC facilities do not invoke or deny MARSA. Their sole responsibility concerning the use of MARSA is to provide separation between military aircraft engaged in MARSA operations and other non-participating IFR aircraft.

c. DOD shall ensure that military pilots requesting special use airspace (SUA)/ATC assigned airspace (ATCAA) have coordinated with the scheduling agency, obtained approval for entry, and are familiar with appropriate MARSA procedures. ATC is not responsible for determining which military aircraft are authorized to enter SUA/ATCAA.

#### **1-4-9. RELEASE OF AIRCRAFT TO GROUND CONTROL APPROACH (GCA) UNITS**

When a GCA unit is located on an airport which is provided IFR service by an FAA facility, details concerning the release of arriving and/or departing aircraft to the unit shall be contained in an LOA. Include the following items:

- a. Details of the procedures, GCA patterns, release points, and areas to be used.
- b. The maximum number of aircraft which may be released to GCA at any one time.
- c. Specific instructions concerning a missed approach, loss of communications, and loss of radar.
- d. A statement that the GCA unit shall be responsible for maintaining radar separation in accordance with FAA Order 7110.65.

e. Detailed instructions concerning the exchange of information between GCA and approach control.

#### **1-4-10. CONTROL OF FLIGHTS IN PATTERN**

At locations where the FAA facility normally vectors arrivals to base leg or final approach, permit the GCA unit to control sufficient flights throughout the pattern to maintain proficiency.

#### **1-4-11. EXCHANGE OF INFORMATION**

At airports served by an FAA tower and a military GCA unit, an LOA shall be formulated containing the following items:

- a. Before conducting actual or practice GCA approaches, GCA personnel shall coordinate with the tower to obtain approval of the runway of intended landing.
- b. If GCA personnel wish to subsequently change runways, they shall coordinate with and obtain approval from the tower for this change.
- c. GCA personnel shall include the number of the runway of intended landing when the base leg report is relayed to the tower.
- d. If a GCA approach is to be conducted straight-in, the number of the runway of intended landing shall be relayed to the tower when the final controller assumes control of the aircraft, but in no case later than the time the aircraft is 6 miles from the end of the runway.
- e. Procedures for opposite direction approaches.

1. An LOA defining inter- and intra-facility coordination shall establish cut off points; such as, distances or fixes for authorizing the approach.

## Section 5. AIR TRAFFIC REPRESENTATIVE (ATREP)

### 1-5-1. ASSIGNMENTS

A Regional Air Traffic Division ATREP may be assigned to each military approach control facility. Assignments shall be based on operational need rather than the amount of civil traffic being handled by the facility.

### 1-5-2. RESPONSIBILITIES

The ATREP shall:

a. Serve as liaison officer between the military, the FAA, and where applicable, civil users.

b. Participate in the resolution of local air traffic control problems between military and civil users of the terminal area so that both are afforded the maximum service possible.

c. Conduct frequent liaison with FAA, civil, and military personnel to determine adequacy of ATC services rendered.

d. Serve as technical advisor to the military in all phases of air traffic control in order to improve air traffic control services.

e. Evaluate the amount of airspace required for air traffic control in terminal areas, and coordinate approval of airport traffic patterns.

f. Participate in appropriate military meetings in which the FAA has an interest.

g. Encourage lecture and training programs for base pilots and civil air user groups.

h. Suggest changes to improve the air traffic control facility training program.

i. Administer control tower operator examinations and issue appropriate FAA certificates and ratings.

j. Coordinate letters of agreement between the military facilities and other ATC facilities.

k. Notify the manager, National Flight Data Center, Washington, D.C., with an information copy to the regional Air Traffic division of changes to radar services provided by the military facility for publication in the Airport/Facility

Directory and other aviation information publications. These data shall pertain only to those services and airports that are authorized for general civil use.

l. Inform the next higher level of authority (who in turn will coordinate the matter with appropriate military authority) whenever an agreeable solution cannot be reached at the local level on controversial matters and interpretative issues.

m. Participate in the near midair collision program (NMAC).

n. Provide technical advice and assistance on matters concerning airspace allocation and use, Federal Aviation Regulations, and air traffic control services provided by the FAA.

o. Assist in resolving conflicts between the military and civil users regarding Special Use Airspace (SUA) and ATC assigned airspace (ATCAA) (where the terminal facility controls that airspace) so as to achieve maximum compatibility of user requirements and to enhance operational safety.

p. Encourage and participate when possible in briefings for military personnel on FAA air traffic control procedures and NAS requirements in terms of their applicability to the safe, orderly, and effective conduct of military operational flying within the common National Airspace System.

### 1-5-3. FAMILIARIZATION FLIGHTS

The ATREP, during the first year of duty, should complete one familiarization flight every 6 months in the unit's primary aircraft and, thereafter, one flight per year. When unit resources are available and unit mission is not degraded, the ATREP should attempt to complete a flight every 6 months in each unit-equipped aircraft.

#### NOTE-

*It is mutually beneficial for controllers and pilots to familiarize themselves with the others' duties and responsibilities. It is highly encouraged that familiarization trips be approved. FAA controller familiarization trips on military aircraft are governed by FAA Order 3120.29, Familiarization Training Program.*

**1-5-4. REQUIRED ABSENCE**

When required to be absent from his/her assigned location for 5 or more consecutive days, the ATREP shall:

a. Notify the appropriate military authority and ARTCC, and furnish the name and location of the designated alternate.

b. Notify the designated alternate, and apprise him/her of matters requiring ATREP services.

**1-5-5. ALTERNATE AIR TRAFFIC REPRESENTATIVE**

In order to insure continuing FAA representation, an appropriately qualified alternate ATREP shall be designated to substitute for the assigned specialist during periods of extended absence.

**1-5-6. DUTIES OF ALTERNATE**

The alternate shall:

a. Perform the ATREP duties to the extent possible.

b. Visit the concerned military installation at least once during each extended period of the ATREP's absence or at intervals prescribed by the region.

**1-5-7. COORDINATION**

The ATREP and his/her designated alternate shall coordinate to assure familiarity with current operating procedures. This coordination may consist of, but is not limited to, an exchange of correspondence, telephone calls, and personal visits.

**1-5-8. LEAVE PERIODS**

Regions shall insure that an ATREP and his designated alternate are not approved leave for the same period.

## **Section 6. FAA MILITARY LIAISON OFFICERS' RESPONSIBILITIES**

### **1-6-1. ACTIONS**

Liaison officers shall take the following actions in connection with proposed military exercises:

a. Encourage mission planning officers to include assigned airspace requirements in the information disseminated with the request for exercise approval.

b. Recommend the use of planning conferences to mission planning officers for the resolution of problems when it is evident that the exercise requirements will generate sufficient traffic to create untenable air traffic or airspace user situations.

c. Provide early notification and information to the affected ARTCC's and CARF on any exercises which are classified under subparagraph b.

## Section 7. MISCELLANEOUS

### 1-7-1. ASSIGNMENT OF MILITARY TOWER OFFICERS

At the request of the USAF, a tower officer may be assigned to the cab of an FAA tower located on a joint-use airport or military base if space other than at the operating desk is available. Under these circumstances:

a. Telephone or intercom equipment which is necessary by virtue of the assignment of a military officer to the tower shall be independent of the tower system and shall be reimbursable.

b. Install no radio equipment at this position. The release of a frequency and transmitting capability to the tower officer shall be at the discretion of the area manager, and only in the case of an emergency. No traffic control instructions shall be formulated or transmitted by the officer, nor shall the office interfere in any manner with the performance of air traffic control duties by FAA personnel.

c. The officer assigned shall be on duty only during military flight activities. In many cases, this will be only during the hours from sunrise to sunset.

d. The number of personnel so assigned shall be kept at a minimum. In most cases, one officer should suffice to provide the necessary services.

### 1-7-2. SUPERVISOR OF FLYING (SOF)

Procedures governing the use of designated SOF inflight emergency frequencies shall be contained in a letter of agreement between the USAF and the appropriate FAA ATC facility.

a. The letter of agreement (LOA) shall specify a radio frequency to be used by the SOF during the emergency.

b. Each LOA shall contain explicit coordination procedures to be followed by the SOF prior to use of any ATC frequency including 121.5/243.0.

c. ATC shall have the capability to override the SOF discrete frequency when required for ATC purposes.

### 1-7-3. MILITARY AIRSPACE MANAGERS

The military services have assigned airspace managers at various levels of command who are responsible to work with the FAA and other agencies to identify, coordinate, procure, and manage airspace, and to develop and coordinate agreements/procedures to support military flight operations in meeting both peace and war-time requirements.

## Chapter 2. EXERCISE PLANNING

### Section 1. GENERAL

#### 2-1-1. PURPOSE

This chapter identifies requirements, establishes policy, prescribes procedures, and sets forth criteria to be applied when planning a military exercise. The authority, responsibility, and general operating procedures are defined herein.

#### 2-1-2. POLICY

Exercises will be planned, insofar as possible, to be conducted within the National Airspace System. Exercise planners shall coordinate with the affected ATC facilities all pertinent data relative to the mission. During initial planning with the FAA, a decision will be made to determine the capability of the FAA to provide ATC services for the entire exercise, or the extent to which services can be provided. Airspace requirements must be identified at this initial planning stage to ensure adequate processing time for airspace actions. Efforts will be made to minimize conflicts with other operations being conducted in the area.

#### 2-1-3. PROCEDURES

ATC services to exercise aircraft shall be predicated on the following:

- a. Issuance of an appropriate ATC clearance. This includes filing a flight plan for each departure. The method of filing may be determined at the local level.
- b. Pilot adherence to procedures, routes, and altitudes as agreed to between military users and ARTCC's through letters of agreement (LOA's).
- c. Aircraft participating in planned exercises shall be afforded ATC clearances honoring departure times with regard for safety of flight as agreed upon through LOA's.
- d. Procedures for an Altitude Reservation (ALTRV) required in the conduct of an exercise are contained in Chapter 3 of this order.

#### 2-1-4. SPECIAL USE AIRSPACE (SUA)

a. The establishment of SUA as defined in FAA Order 7400.2, Procedures for Handling Airspace Matters, for planned exercises shall be processed through the appropriate FAA regional military representative. Other airspace; i.e., ATC assigned airspace (ATCAA), Air Refueling Tracks, etc., shall be coordinated with the appropriate ARTCC.

b. Exercise airspace should be approved provided the airspace requirements will not impose an untenable burden upon the National Airspace System.

c. The appropriate military authority, when denied exercise airspace, may request the regional military representative to obtain further consideration from the FAA Regional Air Traffic Division.

d. LOA's for exercise operations in ATCAA, stereo-type flight plans, and other exercise procedures shall be coordinated with the ARTCC's concerned at least 45 days prior to the beginning of the proposed exercise.

#### 2-1-5. MILITARY AIRSPACE PLANNING

To assist FAA and military personnel in planning and preparing for military exercises that require establishment of temporary SUA, the following listing of information items has been developed.

##### REFERENCE-

*FAA Order 7400.2, Procedures for Handling Airspace Matters*

a. After all coordination has been completed and in sufficient time to process an airspace action, if needed, (FAA Order 7400.2), a formal proposal should be submitted to the appropriate FAA Regional Office. The proposal should include:

1. Name of exercise.
2. Location and description of temporary SUA.
3. Time of designation.
4. Controlling and using agency.



5. Complete justification for the airspace to include:

(a) Number of aircraft involved.

(b) Types of aircraft and missions they will perform.

(c) The exercise concept of operation (scenario).

6. A statement explaining if the entire exercise area, as requested, is for the complete exercise period, or does the scenario allow for real-time coordination and release of a portion of the area. If a portion can be released, specify each portion providing vertical and horizontal dimensions and for what period of time.

7. Requirements for refueling tracks, location, VFR or IFR, in or below Class A airspace.

8. Commands that will participate in the exercise.

9. Requirements for FAA liaison personnel at exercise facilities and military liaison personnel at affected FAA facilities.

10. Provisions to be made for non-participating aircraft desiring to operate within the exercise area.

(a) Local airport operations.

(b) Ingress and egress routes.

(c) Overflights.

(d) Capability of the using agency to accept direct radio requests from pilots.

b. Four months prior to the proposed effective date, the proponent furnishes the following data:

1. Bases to be used as staging airfields and the estimated volume of activity at each.

2. Inactive bases to be activated and their locations.

3. Military control facilities or navigational aids to be established where none now exists for use by participating aircraft outside of the exercise area. Information provided should include locations and frequencies.

4. Requirements for ingress and egress areas (vector areas).

5. Requirements for routes from staging bases to include estimated volume of use.

6. Location of military air traffic facilities.

7. Requirements for military control of exercise traffic outside of the exercise area.

c. Three months prior to beginning of the exercise:

1. Make provisions to assure that participating pilots are provided the capability of closing VFR flight plans.

2. Provide information concerning other activities not mentioned which will require development of special operating procedures and/or FAA military agreements.

d. Forty-five (45) days prior to beginning of exercise:

1. Provide any additional information deemed necessary by FAA or the exercise proponent.

2. Provide copies of all established procedures and agreements for distribution to FAA and military personnel who require this information.

## **2-1-6. CHANGES IN REQUIREMENTS**

Changes to the exercise should not be made within 45 days of the exercise unless they are absolutely essential to the safe and successful conduct of the exercise, or to reduce the amount of SUA to be designated.

## **2-1-7. PUBLIC NOTIFICATION**

To minimize the effect of an exercise upon the public and to enhance flying safety, the military with the assistance of the FAA shall acquaint the public, to the maximum extent possible, with the location, configuration, and periods of use of the exercise areas.

## **2-1-8. PLANNING CONFERENCES**

Initiate action to resolve problems attendant to military exercises which appear to impose an untenable burden upon the air traffic control system or other users of the airspace through the use of planning conferences, telephones, or other suitable media.

## **Section 2. AIR COMBAT COMMAND (ACC) EXERCISE/ OPERATIONAL READINESS INSPECTION (ORI)**

### **2-2-1. EXERCISE/ORI**

a. To the extent practical, exercises and ORI's shall be conducted using existing special use airspace (SUA), military training routes (MTR), air refueling tracks/anchors, and Airborne Warning and Control System (AWACS) orbits. The exercise/ORI project officer shall advise the appropriate ARTCC/CERAP's of the exercise/ORI objective, scenario, and execution date and shall ensure coordination is effected in sufficient time to establish arrival/departure procedures, ingress/egress of target/exercise area/air refueling tracks/anchors.

b. If alteration of existing SUA or the establishment of temporary SUA, MTR's, air refueling tracks/anchors, and/or AWACS orbits are required for an exercise or ORI, the exercise/ORI project officer shall ensure coordination is effected with the appropriate ARTCC/CERAP's in sufficient time to comply with the lead time required for

development of letters of agreement and processing airspace proposals.

c. If an Altitude Reservation (ALTRV) is required for the exercise/ORI, the project officer shall ensure the above coordination is coordinated with the appropriate ARTCC/CERAP's prior to submitting the ALTRV request to the FAA Central Altitude Reservation Function (CARF).

d. ATC facilities may authorize communications out/reduced communications procedures in lieu of radio position reporting if required by military operations and prior coordination has been accomplished with affected ATC facilities.

### **2-2-2. NOTIFICATION OF EXERCISE/ORI**

Exercise/ORI mission notification will be provided no later than 30 days prior to the departure date of the mission to the affected ARTCC/CERAP's.

## **Section 3. AIR MOBILITY COMMAND (AMC) EXERCISE/OPERATIONAL READINESS INSPECTION (ORI)**

### **2-3-1. ORI**

The AMC project officer shall coordinate with the ARTCC affected by an ORI to establish arrival/departure procedures, ingress/egress of target areas and air refueling tracks/anchor areas prior to submitting the Altitude Reservation (ALTRV) to the FAA Central Altitude Reservation Function (CARF).

### **2-3-2. NOTIFICATION OF ORI**

Exercise/ORI mission notification will be provided no later than 30 days prior to the departure date of the mission to the affected ARTCC/CERAP's.

## **Section 4. United States Strategic Command (USSTRATCOM) OPERATIONAL READINESS INSPECTION (ORI)**

### **2-4-1. ORI BOOKLETS**

The USSTRATCOM will provide current ORI Altitude Reservation Flight Plan books to appropriate ARTCC/ATC facilities and Air Defense Regions/Sectors. The Central Altitude Reservation Function (CARF) will be provided with a current base code listing to be used for identifying participating units.

### **2-4-2. NOTIFICATION OF ORI**

ORI mission notification will be provided to CARF via telephone no later than (NLT) 30 calendar days prior to the date of the mission. The Inspector General Scheduling Division (IGXP) will forward the current information NLT 15 days prior to the mission. The telephonic coordination will include:

- a. Mission names (from ORI books).
- b. Call signs (if they differ from the ones listed in the ORI books).
- c. Initiation hour ("I" hour) - the earliest time a unit may be told of the mission timing.
- d. Execution reference time ("ERT") - hour mission take-off time.

### **2-4-3. NOTIFICATION FORMAT**

CARF shall forward the ORI mission notification information to the required ARTCC/CERAP(s) no later than 30 days prior to the departure date of the mission. The ARTCC/CERAP's shall be provided the current information, as provided by IGXP, NLT 15 days prior to the mission via the AFTN network as follows:

- a. Mission name.
- b. Bomber call signs.
- c. Tanker call signs.
- d. "I" hour.
- e. "ERT" hour.

### **2-4-4. MISSION DELAYS**

ORI missions will delay in 24-hour increments.

## **Section 5. AIR DEFENSE EXERCISES**

### **2-5-1. RADAR MONITORING OF FAKER AIRCRAFT**

a. Prior coordination shall be effected between the ARTCC/CERAP and Air Defense Control Facility (ADCF) Faker Monitor to determine which facility will provide radar monitoring to faker aircraft. This includes operations in uncontrolled airspace within the ARTCC/CERAP's Flight Advisory Area and Warning Areas within the ARTCC/CERAP's radar coverage. Whenever this service cannot be provided or is terminated, the faker monitor at the appropriate ADCF shall be advised.

b. The ADCF, upon being advised by the ARTCC/CERAP's that radar monitoring service cannot be provided or is terminated, shall assume radar monitoring responsibility within the capabilities of the ADCF.

### **2-5-2. SEPARATION RESPONSIBILITY BETWEEN INTERCEPTOR/FAKER AIRCRAFT**

The ADCF shall provide separation between interceptors and between interceptors and faker aircraft. The route or altitude of faker aircraft shall not be changed by an ADCF, except in exercise airspace, unless a clearance is obtained from the ARTCC/CERAP.

### **2-5-3. CODE ASSIGNMENT WITHIN NORAD AREAS**

a. FAA and NORAD shall ensure strike force aircraft flight planned as faker aircraft during planned air defense exercises are assigned discrete beacon codes from subsets reserved for exclusive use by the military as specified in the Memorandum of Understanding between the Department of Defense and the Federal Aviation Administration Concerning the Joint Operational Use of the Military IFF System and the Civil Air Traffic Control Radar Beacon System, Appendix 6. Whenever possible, these codes should not be changed by ATC until the aircraft is ready for hand-off to the terminal facility for recovery.

b. If operational requirements necessitate the simultaneous use of a discrete beacon code by more than one faker aircraft, the aircraft assigned the same discrete code shall not be flight planned to be in the same or an adjacent ARTCC/CERAP's airspace at the same time.

### **2-5-4. STRIKE/FAKER IDENTIFICATION AND UNSAFE PROCEDURES**

Aircraft identification will be effected using the discrete Mode 3/4096 code assignments referred to in paragraph 2-5-3. ARTCC/CERAP's may supplement this with identification features. ADCF's may assign Mode 3 code 5000 momentarily while aircraft are within assigned airspace and located on the strike route to indicate "unsafe for intercept" conditions.

## Section 6. NAVY EXERCISES

### 2-6-1. AIR CAPABLE SHIP OPERATIONS

Flight Operations involving air capable ships may include cyclic operations and ALFA strikes. Launch sequence plans shall be coordinated in advance with the ARTCC/CERAP's involved with providing IFR service to the aircraft from air capable ships. Specific time requirements for advance notification should be covered in letters of agreement (LOA) between the ARTCC/CERAP's and the local Navy command.

### 2-6-2. FLEET READINESS EXERCISES

The Navy project officer shall coordinate with the ARTCC/CERAP's involved in the handling of aircraft operating from shore bases participating in fleet readiness exercises at least 30 days prior to the exercise.

### 2-6-3. CENTRAL ALTITUDE RESERVATION FUNCTION (CARF) APPROVED STATIONARY ALTRV's

Navy exercises requiring CARF altitude reservations shall be coordinated in accordance with Chapter 3.

### 2-6-4. FLEET ELECTRONIC WARFARE SUPPORT GROUP

The Fleet Electronic Warfare Support Group (FEWSG) project officer shall coordinate with the ARTCC/CERAP's concerned with the handling of FEWSG exercise aircraft and shall comply with the provisions of Section 7. of this chapter.

### 2-6-5. FAA/NAVY ATC PLANNING CONFERENCES

ATC planning conferences may be required between the Navy and the ATC facilities involved with the handling of Navy aircraft participating in an exercise. The determination on the need for an ATC planning conference may be based on the information provided to the ARTCC/CERAP's

during initial coordination by the Navy project officer or as specified in LOA's between the ARTCC/CERAP's and the local Navy command.

### 2-6-6. AIR CAPABLE SHIP FLYOFFS

Procedures for coordination and handling of air wing flyoffs from air capable ships returning from overseas deployment shall be developed between appropriate East/West coast ARTCC/CERAP's and the appropriate Navy commands.

### 2-6-7. LIAISON

Procedures shall be developed to provide for liaison visits to the aircraft carrier by representative personnel from the impacted ATC facility. Carrier air wing and air operations personnel shall develop procedures to visit ATC facilities.

### 2-6-8. FLEET AREA CONTROL AND SURVEILLANCE FACILITIES (FACSFAC)

FACSFAC's are Navy air traffic control facilities which manage offshore and inland operating areas. FACSFAC's perform the following services:

a. Scheduling, coordinating, monitoring, and/or control of subsurface, surface, and airborne military units operating within and transiting between offshore areas.

b. Scheduling, coordinating, monitoring, and/or control of airborne units operating within assigned inland airspace.

c. Area containment services within assigned airspace and radar/communication coverage.

d. Air traffic control services in accordance with FAA Order 7110.65 to military units, other government aircraft, government contract aircraft, and civilian aircraft as defined by letter of agreement with applicable FAA and military activities.

e. Assistance during search and rescue and medical evacuation.

## **Section 7. ELECTRONIC COUNTER MEASURES (ECM) MISSIONS/EXERCISES**

### **2-7-1. APPLICATION**

The procedures contained herein pertain to the conduct of ECM missions in the following areas:

a. The conterminous U.S. including the District of Columbia, plus the area extending to the outer boundaries of the coastal Air Defense Identification Zones (ADIZ) or a perimeter of 150NM seaward from the coastal states, whichever is farthest out, except where this infringes on the territorial limits of other nations.

b. The State of Alaska including the Aleutian Islands plus the area extending to the outer boundaries of the Alaskan ADIZ.

c. The State of Hawaii comprising that area within a 300NM radius of 21-20N, 157-57W (Hickam AFB, Hawaii).

### **2-7-2. GENERAL**

All ECM activity to be employed in a mission/exercise shall be coordinated with the appropriate FAA Regional Frequency Management Office (FMO). Coordination must be effected prior to approval of the mission/exercise. The responsibility for coordination with the FAA Regional FMO rests with the military unit planning the ECM activity. Coordination with FAA Headquarters Spectrum Policy and Management Division will be completed through normal military command channels by the military service frequency management office. Final FAA authorization will be given in writing by Headquarters FAA. (Refer to FAA Order 7610.11.)

### **2-7-3. PARTICIPATION**

At the direction of Headquarters Air Combat Command (ACC), specified units will launch aircraft at selected intervals against preplanned NORAD areas. The faker force will contain a large number of United States Strategic Command (USSTRATCOM) and other supplementary aircraft equipped with varied loads of electronic warfare equipment. In addition, interceptor aircraft from air defense/air defense augmentation units may be programmed to participate.

### **2-7-4. COORDINATION**

These exercises shall be coordinated by the military forces at conferences with affected FAA facilities. The ACC Liaison Officer (ACCLO) and the Air Defense Liaison Officer (ADLO) shall be the principal FAA representatives at the planning conferences and shall be responsible for proper coordination between all parties concerned. The ACCLO/ADLO is the primary FAA official responsible for the coordination process for interceptor airspace. The air division airspace manager is responsible for interceptor negotiations during the coordination process. FAA facility participation at the conferences will be determined between FAA ACCLO/ADLO and the region(s) concerned. Appropriate FAA Frequency Management personnel shall attend exercise planning conferences.

### **2-7-5. DURATION**

These exercises will last from 6 to 12 hours. However, no one ARTCC/CERAP will be affected for the entire duration. The faker aircraft will operate on an altitude reservation (ALTRV) basis. Interceptor aircraft will also operate in ATC assigned airspace (ATCAA) and/or special use airspace (SUA) as coordinated.

### **2-7-6. ESTABLISHMENT**

During the planning conference(s), the ALTRV to be flown will be developed/designed to meet the military need in accordance with established procedures. When approving the low level segments of the ALTRV, every effort should be made to ensure adequate provisions for the normal requirements of other airspace users. Consideration should be given to traffic density, hours of operation, and other similar factors.

### **2-7-7. EXECUTION**

In the execution of these missions, the military has agreed to the following:

a. Conduct the mission, to the extent possible, during periods of low traffic density.

b. Employ chaff in accordance with the current FAA Headquarters authorization.

c. NAVAID frequency bands and secondary radar beacon frequencies shall not be jammed.

#### 2-7-8. ECM CLEARANCE

Prior to initiating ECM, and after national level DOD and FAA approvals, flight crews are required to notify the appropriate NORAD Region Operations Control Center (ROCC)/Sector Operations Control Center (SOCC) having jurisdiction over the airspace within which the ECM is to be conducted. This notification shall include the ECM authorization number. If unable to contact the appropriate NORAD facility directly, request the ARTCC/CERAP to pass the information to NORAD.

#### NOTE-

*ARTCC/CERAP's are the final approval authority for all ECM activity.*

a. An open area has been determined as described below wherein the flight crews are not required to notify NORAD of ECM activity. Permission to conduct ECM in this area must still be obtained in accordance with procedures as outlined above.

b. The open area is defined as:

31°56"N/113°00"W to 35°00"N/113°00"W  
to

37°00"N/118°00"W to 40°00"N/119°00"W  
to

45°00"N/116°15"W to 46°00"N/100°00"W  
to

44°30"N/95°00"W to 42°00"N/92°00"W  
to

40°00"N/80°00"W to 35°45"N/81°15"W  
to

33°00"N/84°00"W to 30°25"N/88°00"W  
to

the point of origin.

#### 2-7-9. SUSPENSION OF ECM

##### REFERENCE-

*FAAO 7110.65, CHAPTER 5, PARA. 5-1-5, ECM/ ECCM ACTIVITY*

a. Terminal facilities shall request suspension of ECM activity through the ARTCC/CERAP's.

b. ATC will use the term Stop Buzzer, Stop Stream, or Stop Burst (on guard frequencies) to require cessation of such activity. If unable to contact the aircraft involved, the affected ATC facility will contact the ROCC/SOCC by direct voice and request Stop Buzzer, Burst, or Stream; specifying the band, the duration of the request and facility identification.

c. Upon receipt of such a request, the ROCC/SOCC will take immediate action to contact the ECM aircraft and direct the aircraft to stop the specified activity. The ROCC/SOCC will then confirm with the ARTCC/CERAP's that it has taken action to terminate ECM activity. The affected ATC facility who directed suspension of the ECM activity will authorize resumption of the activity at the earliest possible time.

#### 2-7-10. ECM ACTIVITY TABLE

ECM operations may be conducted on all authorized frequencies from 0-100,000 mHz, if approved. Only activity which is conducted on the frequencies listed in the following table are of interest to FAA facilities. (See TBL 2-7-1.)



## ECM Frequencies Affecting FAA Facilities

<u>FREQUENCY (MHZ)</u>	<u>BAND DESIGNATION</u>	<u>TYPE ECM</u>	<u>FACILITIES AFFECTED</u>
0.009-0.014	A-1	Electronic	OMEGA
0.090-0.110	A-1	Electronic	LORAN C
0.190-0.535	A-1	Electronic	Nondirectional Beacons
2.100-28.000	A-1	Electronic	A/G Radio & Fixed Point-to-Point
74.8-75.2	A-1	Electronic	NAVAID (Marker Beacon)
108-118	A-5	Electronic	NAVAID (VOR & ILS)
118-137	A-5 & A-6	Electronic	ATC Comm; Emergency Locator Transmitters (ELT/EPIRB)
138-150.8 & 162-174	A-7	Electronic	Fixed & Mobile Communications
225-400	A-10 & B-1 thru B-6	Electronic	ATC Comm; ELT/EPIRB
328.6-335.4	B-4	Electronic	NAVAID (Glide Slope)
406-420	B-7	Electronic	Fixed/Mobile Comm & ELT/EPIRB
800-20000		Chaff	Radar; NAVAID's
960-1215	C-10 & D-1 thru D-3	Electronic	NAVAID (TACAN & DME)
1030 & 1090	D-1	Electronic	Secondary Radar Beacon
1215-1240	D-3	Electronic	Global Positioning System (GPS)
1240-1370	D-3 & D-4	Electronic	Air Route Surveillance Radar (ARSR)
1435-1535	D-5 & D-6	Electronic	Telemetry
1535-1660	D-6 & D-7	Electronic	Satellite/Altimeters
1710-1850	D-8 & D-9	Electronic	Low Density Microwave Link
2310-2390	E-4	Electronic	Telemetry
2700-2900	E-8 & E-9	Electronic	Airport Surveillance Radar (ASR)
2700-3000	E-8 thru E-10	Electronic	Weather Radar
3500-3700	F-6 & F-7	Electronic	Airport Surveillance Radar (ASR)
4200-4400	G-2	Electronic	Airborne Radar Altimeter
5000-5250	G-6 & G-7	Electronic	NAVAID (Microwave Landing System)
5350-5470	G-7 & G-8	Electronic	Airborne Radar
5600-5650	G-9	Electronic	Terminal Doppler Weather Radar
7125-8400	H-6 thru H-10 & I-1 & I-2	Electronic	Radio Communication Link
8750-8850	I-4 & I-5	Electronic	Airborne Doppler Radar
9000-9200	I-6	Electronic	Military Precision Approach Radar (PAR)
9300-9320	I-7	Electronic	Ground Based Radar Beacon
9320-9500	I-7 & I-8	Electronic	Airborne Weather Radar
13250-13400	J-4	Electronic	Airborne Doppler Radar
14400-15350	J-5 & J-6	Electronic	Television Microwave Link
15400-15700	J-6	Electronic	Airborne Weather Radar
15700-17300	J-6 thru J-8	Electronic	Airport Surveillance Detection Equipment (ASDE)
21000-23600	K-3	Electronic	ASDE

TBL 2-7-1

# Chapter 3. ALTITUDE RESERVATION (ALTRV) PROCEDURES

## Section 1. GENERAL

### 3-1-1. PURPOSE

This chapter establishes policy, prescribes uniform procedures, and sets forth criteria to be applied to all phases of an ALTRV. The authority, responsibility, and general operating procedures under the ALTRV concept for Central Altitude Reservation Function (CARF) and other concerned ATC facilities are herein defined.

#### NOTE-

*Responsibility has been accepted by the military and is clearly defined for those military personnel whose duties include the application of these procedures.*

### 3-1-2. POLICY

An altitude reservation is authorization by the CARF or the appropriate ARTCC/CERAP under certain circumstances, "for airspace utilization under prescribed conditions." An altitude reservation shall receive special handling from FAA facilities.

a. CARF or the appropriate ARTCC/CERAP (if the approving authority) is responsible for separation of the ALTRV mission from other ALTRV's after the aircraft have reached the first cruising altitude to a point where descent is started into the destination airport or where the ALTRV ends.

b. ALTRV's shall be classified as either moving or stationary.

1. A moving ALTRV will normally include the en route and arrival phases of flight up to and including the arrival holding pattern at which ATC provides separation between aircraft in accordance with FAA Order 7110.65.

2. A stationary ALTRV will normally define the fixed airspace area to be occupied as well as the specific altitude(s) and time period(s) the area will be in use.

### 3-1-3. APPLICATION

An ALTRV shall be employed when a number of aircraft must be moved with less IFR separation between aircraft than is allowed by standard ATC criteria or when a number of aircraft must operate within prescribed altitudes, times, and/or areas.

a. In the application of ALTRV procedures, policies, and criteria, due consideration shall be given to total user requirements throughout the navigable airspace in accordance with the procedures prescribed herein.

b. ALTRV's may encompass rocket, missile, and remotely piloted vehicle (RPV) activities and other special operations.

c. An ALTRV shall not be requested if the mission can otherwise be accomplished without excessive derogation.

d. An ALTRV shall not be authorized for operations that are normally conducted in airspace expressly designated for a special activity.

e. Any aircrew which plans to air refuel in Canadian airspace is required to file an ALTRV with CARF and/or the Canadian Altitude Reservation Unit (CARU) except as noted in FLIP AP 1/B. Both tankers and receivers are required to file an ALTRV in accordance with the time requirements set forth in paragraph 3-4-2.

f. An ALTRV approval does not constitute authorization for chaff or electronic counter measure (ECM) activities. (FAA Order 7110.11)

g. Single aircraft, which will join a tanker for refueling, will file an ALTRV to begin at the air refueling initial point (ARIP). Normally the ALTRV will be terminated after the refueling is completed.

h. Aircraft established on an approved ALTRV route and altitude shall not be changed except in the interest of safety to flight. The ARTCC/CERAP shall have the prerogative of canceling the entire ALTRV if the aircrew requests routing and/or altitude changes which are not in the

approved ALTRV. Due consideration will be given to the ALTRV when deviations are required.

#### **3-1-4. ALTERNATE REFUELING TRACKS**

a. A facility shall not approve alternate refueling tracks and routes on the initial ALTRV Approval Request (APREQ), although they may be filed with the request and subsequently approved until 12 hours prior to the scheduled departure time.

b. When an alternate refueling track is approved, the primary refueling track route shall be canceled.

#### **3-1-5. USER REQUIREMENTS**

a. When approving an ALTRV, every effort should be made to ensure requested altitudes are approved and to provide adequate altitudes for the normal requirements of other airspace users. Total user requirements, traffic flow, available routes, military missions, and other operations which are using or which propose to use the ATC system must be afforded equitable consideration.

b. Special care shall be exercised when processing ALTRV requests which entail operation on a broad frontal width. Indiscriminate approval of these requests would render a considerable portion of navigable airspace unavailable to other users for extended periods of time.

#### **3-1-6. ALTITUDE CRITERIA**

a. Altitude utilization criteria must be flexible and adjusted as required. Seasonal traffic trends and revised civil and military jet inventories are factors which necessitate flexibility.

b. Due to pressure gradients, FL 180 will not normally be acceptable on an ALTRV except in oceanic airspace.

c. The normal altitude block assignments for non-stream aircraft are:

1. Two aircraft refueling, two altitudes.
2. More than two aircraft, 500 feet per aircraft.

**NOTE-**

*Flights of six or more aircraft should consider cell formations; 30 minutes between the cells.*

## Section 2. CENTRAL ALTITUDE RESERVATION FUNCTION (CARF) RESPONSIBILITIES

### 3-2-1. CANADIAN AND OVERSEAS

Coordinate ALTRV requests as required for missions which depart from points within the U.S. control area/flight information region (CTA/FIR) and penetrate another country's FIR with the appropriate international altitude reservation facilities.

#### NOTE-

*Do not coordinate or approve classified missions which penetrate another CTA/FIR unless authorized by DOD. See paragraph 3-9-1b.*

### 3-2-2. CLEARANCE AUTHORITY

a. CARF is authorized to approve an ALTRV in the U.S. CTA/FIR:

1. FL 240 and above west of the 100th meridian.

2. 18,000 MSL and above east of the 100th meridian.

b. CARF is the final approval authority for any ALTRV departing U.S. airspace which traverses or penetrates airspace outside U.S. CTA/FIR.

### 3-2-3. ALTRV APPROVAL REQUEST (APREQ)

CARF shall:

a. Transmit all ALTRV APREQ's to the appropriate ARTCC/CERAP and Canadian Altitude Reservation Unit (CARU) and list those facilities in Item G of the ALTRV APREQ per Section 9 of this chapter.

#### NOTE-

*This includes aircraft departing a point in the U.S. on a DD-175/1801 and beginning an ALTRV in Canadian Airspace.*

b. Normally, CARF will transmit the APREQ to impacted ARTCC/CERAP's prior to issuing an approval.

c. When mission requirements or timeliness dictate, coordinate as needed by telephone, facsimile machine, or other electronic means.

#### NOTE-

*The coordination requirement may be waived as needed to comply with Executive Order (EO) 11161 and EO 11382 or in an emergency.*

d. Ensure Pacific Military Altitude Reservation Facility/European Central Altitude Reservation Facility (PACMARF/EUCARF) are addressed on the military ALTRV APREQ for any mission which departs U.S. airspace and traverses their countries' FIRs or penetrates their traffic.

e. Advise all concerned ATC/international altitude reservation facilities and the project officer of any change to the original ALTRV APREQ prior to issuing a final ALTRV approval.

f. Process changes submitted by the project officer and ATC/international altitude reservation facilities provided they are of an operational requirement.

### 3-2-4. ALTRV APPROVAL (APVL)

CARF shall be the final approval authority for any ALTRV departing a point within the U.S. CTA/FIR, except as provided for in paragraph 3-3-2. CARF shall:

a. Forward ALTRV APVL's to all concerned at least 24 hours prior to the proposed departure time, unless a shorter time is coordinated with all concerned ATC facilities. If special instructions are required concerning the delivery of the APVL to the project officer, they are to be included in the ALTRV APVL message. Forward ALTRV APVL's to the following:

1. Concerned ATC facilities.
2. International altitude reservation facilities, as appropriate.
3. Message originator.
4. Tanker support unit.
5. Other parties as requested in Item G of the ALTRV APREQ.

b. Provide the following information in Item G of the ALTRV APREQ:

1. The International Civil Aviation Organization (ICAO) location indicators of the international and domestic air traffic control facilities concerned with the mission.

2. Whenever the requested altitudes include uncontrolled airspace, include the phrase "NOTE ALTRV APVL VALID IN CONTROLLED AIRSPACE ONLY."

c. Precede a No-Notice ALTRV APVL message with "This is a (executing command) No-Notice Mission."

d. Process proposed changes in an ALTRV APVL:

1. At least 24 hours prior to departure.

2. With less than the time specified above, subject to CARF discretion after approval from the affected ATC facilities.

e. Process the ALTRV in accordance with the above procedures and obtain APVL from facilities which about the U.S. CTA/FIR whenever the ALTRV is penetrating traffic.

### **3-2-5. NOTIFICATIONS**

Disseminate ALTRV cancellations to all domestic and international air traffic control facilities concerned as soon as practicable. Forward departure information received from ATC facilities operating in a non-automated mode.

### **3-2-6. AIRSPACE NOT UNDER CARF JURISDICTION**

Coordinate with the appropriate facility and obtain approval for those ALTRV APREQ's which involve airspace not under CARF jurisdiction.

### **3-2-7. RESOLUTION OF CONFLICTS BETWEEN MISSIONS**

Missions with higher precedence will be afforded priority over lower class missions when resolving a conflict. CARF will coordinate with the project officer for resolution of conflicts between missions. Information pertaining to a No-Notice mission conflict shall not be divulged to other than the designated trusted agents (see paragraph 3-3-8).

### **3-2-8. FORMULATE ALTITUDE RESERVATION NOTICE TO AIRMEN (NOTAM)**

CARF is responsible for the formulation of Altitude Reservation NOTAM's for those ALTRV's for which they are the final approval authority. For those areas outside U.S. airspace CARF will state: ADDITIONAL AREA FOR INFORMATION ONLY.

### **3-2-9. ACKNOWLEDGMENT OF ALTRV APREQ'S**

When requested, acknowledge receipt of ALTRV APREQ's to the originator.

### **3-2-10. MESSAGES CLASSIFIED AS ENCRYPT FOR TRANSMISSION ONLY (EFTO)**

Handle all ALTRV messages exchanged between CARF and ATC facilities which are classified as EFTO via Defense Communication Systems. EFTO messages cannot be transmitted to international altitude reservation facilities.

### **3-2-11. LETTERS OF AGREEMENT**

CARF is authorized to enter into letters of agreement as necessary to improve the coordination and processing of ALTRV requests provided that such agreements are not contrary to the provisions of this order. In the furtherance of this objective, CARF is authorized to enter into letters of agreement with the Canadian Ministry of Transport.

## Section 3. ATC FACILITY RESPONSIBILITIES

### 3-3-1. APREQ REVIEW AND COORDINATION

a. Review all ALTRV APREQ's to ensure completeness, and advise CARF of any requested change to the ALTRV APREQ as soon as possible.

b. Coordinate with the approach control facility when the ALTRV will operate within airspace delegated to approach control or other ATC facilities. This coordination should include departure procedures.

c. Ensure that the flight has been approved up to the first cruising altitude requested, provided that the first altitude will be attained within the originating ATC facility's area or the first adjacent ATC facility's area. This coordination includes those ATC facilities to which airspace has been delegated, unless otherwise covered in a letter of agreement with CARF.

### 3-3-2. ARTCC/CERAP APPROVED ALTRV'S

Where practical and advantageous, an ARTCC/CERAP may be the final approval authority for an ALTRV when the entire route of flight and associated protected airspace will not involve more than two ARTCC/CERAPs' area of control jurisdiction. The ARTCC/CERAP shall:

a. Assume the ALTRV APREQ responsibilities outlined in paragraphs 3-2-3 a, c, and d.

b. Assume the ALTRV APVL responsibilities outlined in paragraphs 3-2-4 a through d.

#### NOTE-

*ARTCC/CERAP's are not authorized to approve ALTRV's whose routes of flight or protected airspace are not wholly contained within the U.S. CTA/FIR (see paragraph 3-2-1).*

### 3-3-3. MISSION SEPARATION

Ensure that required separation exists, to the altitudes specified in paragraph 3-3-1, between two or more missions departing within the ARTCC/CERAP of origin.

### 3-3-4. DELIVERY INSTRUCTIONS

When an ARTCC/CERAP is the final approval authority, deliver all ALTRV APVL's and amendments to the designated project officer in accordance with delivery instructions contained in the ALTRV APREQ message. Comply with the security restrictions contained in the APREQ message regarding release time to military personnel, estimated time of departure (ETD), etc.

### 3-3-5. FLIGHT PROGRESS STRIPS

Prepare flight progress strips and other data in accordance with FAA Orders 7110.65 and 7210.3 to display the required information on mission aircraft utilizing an ALTRV.

### 3-3-6. NOTIFICATION

a. Forward departure times of ALTRV aircraft to the ALTRV approval authority. Departure messages shall include the departure time and identification of the following:

1. Cell formation.
2. First and last aircraft of a stream formation.
3. Individual aircraft not listed in the above.

b. Forward cancellations of ALTRV aircraft and other ALTRV changes to CARF and appropriate approach control facilities. This applies to cancellations of individual aircraft within the ALTRV or the whole mission. CARF will forward the information to the appropriate ATC and international reservation facilities.

### 3-3-7. ISSUE ALTITUDE RESERVATION NOTAM

a. ARTCC/CERAP's are responsible for the formulation and dissemination of an altitude reservation NOTAM for ALTRV's for which they are the final approval authority.

b. Coordination shall be effected between adjacent ARTCC/CERAP's for the issuance of a joint altitude reservation NOTAM if it will permit consolidation of the altitude reservation NOTAM information prescribed above.

### 3-3-8. TRUSTED AGENTS

Each ARTCC/CERAP shall provide CARF a current listing of trusted agents updated annually by March 1 or as needed.

### 3-3-9. CHANGES TO ALTRV ROUTING AND ALTITUDE

Routing and altitude(s) of aircraft established on an approved ALTRV shall not be changed except in the interest of safety of flight or as specified below:

#### NOTE-

*An ALTRV APVL authorizes the aircraft to climb or descend as specified. Controllers are not required to issue a climb or descent clearance for the various flight segments. They may, however, request that the pilot advise them prior to initiating an altitude change.*

a. If an aircraft requests routing or altitude changes which are not in the approved ALTRV, the ARTCC/CERAP has the prerogative of canceling the ALTRV for that aircraft. Due consideration to retaining the ALTRV will be given when deviations around weather are required.

b. Short-term adjustments to altitude or course of single aircraft (or standard formation) on an ALTRV may be issued with the concurrence of the aircraft (flight) commander in order to expedite overall traffic flow as long as the controller assures

return of the aircraft to the ALTRV, within their sector or within sectors with which the adjustment and return are directly coordinated

c. If ARTCC/CERAP initiates changes to the ALTRV due to safety or other extraordinary circumstances, military authority assumes responsibility for separation of aircraft (MARSAs), if applicable, is suspended and the ARTCC/CERAP assumes responsibility for separation. The ARTCC/CERAP is also responsible to return the aircraft to the ALTRV as soon as practicable.

#### NOTE-

*Due to critical military operational requirements; e.g., timing, refueling, locations, etc., which necessitated the ALTRV, changes shall be kept to the absolute minimum required for safety.*

d. Multiple cells in an ALTRV are responsible for their own separation (MARSAs) from other cells within the same ALTRV from the initiation of the ALTRV until the termination or cancellation of the ALTRV.

1. Controller assigned course or altitude changes without the concurrence of the formation flight leader will void MARSAs between cells.

2. The ARTCC/CERAP is responsible for returning the cell to the ALTRV as soon as practical and confirm re-establishment of MARSAs between cells.

## Section 4. MISSION PLANNING

### 3-4-1. RESOLVING MISSION CONFLICTS

During periods other than when the provisions of the Security Control of Air Traffic and Navigational Aids (SCATANA) Plan are invoked, an order of precedence shall be applied to all requests for ALTRV's for the purpose of resolving conflicts. Airspace assigned by ATC for the conduct of interceptor activity shall be provided the same order of precedence class number as that applied to the ALTRV associated with the exercise or mission.

#### NOTE-

*The Wartime Air Traffic Priority List for Movement of Aircraft contained in the SCATANA Plan governs the movement of aircraft for airspace user requirements during time of tension and war.*

### 3-4-2. ORDER OF PRECEDENCE

The order of precedence contained herein is designed to facilitate the handling of airspace user requirements.

a. The organization originating an ALTRV request shall assign the appropriate order of precedence class number in accordance with the listing contained herein.

b. The FAA may, under certain emergency conditions, determine an appropriate order of precedence classification.

c. The following class numbers establish the order of precedence designed to resolve mission conflicts in connection with ALTRV's:

1. Class One - Aircraft implementing peacetime national emergency plans as well as missile activities authorized by approved and pre-coordinated procedures or letters of agreement. ALTRV APREQ should be filed as far ahead of departure/estimated time of launch as practicable.

2. Class Two - Aircraft engaged in search and rescue operations. ALTRV APREQ should be filed as far ahead of takeoff as practicable.

3. Class Three - Aircraft engaged in emergency air evacuation, hurricane operations, WX RECON or other operations involving safety

of lives or property; i.e., use of airlift forces as directed by appropriate authority in support of domestic crises. ALTRV APREQ should be filed as far ahead of takeoff as practicable.

4. Class Four - Deployments at the direction of the Joint Chiefs of Staff (JCS) in support of an exercise or large scale mission and fulfilling an unforeseen requirement. The deployment should be essential to the success of the exercise or mission. ALTRV APREQ should be filed as far ahead of departure as practicable.

5. Class Five - Aircraft engaged in important peacetime service, joint or unified/specified command exercises or missions. Notification of application of this priority must be received from the appropriate military headquarters. ALTRV APREQ shall be filed at least 15 days before proposed takeoff. It may be filed less than 15 days before proposed takeoff with CARF approval.

6. Class Six - Aircraft engaged in a large scale mission directed by a major command headquarters. ALTRV APREQ shall be filed at least 10 days before proposed takeoff.

7. Class Seven - Aircraft engaged in evaluation-type operations or overseas deployment. ALTRV APREQ shall be filed at least 4 days before proposed takeoff except for ALTRV's penetrating foreign airspace which requires 6 days.

8. Class Eight - Aircraft engaged in missions directed by specified air forces or commands, aircraft engaged in other training exercises, and all other aircraft requesting ALTRV's. ALTRV APREQ shall be filed at least 4 days before proposed takeoff except for ALTRV's penetrating foreign airspace which requires 6 days.

#### NOTE-

❑ If a mission is directed by JCS or higher, it will be indicated in Item G of the ALTRV APREQ and will carry a higher priority than missions with the same classification.

❑ Any missions which will be flight planned into or through EUCARF/PACMARF area of coordination should consult the appropriate DOD regulations, for correct lead time requirements prior to submitting the associated ALTRV APREQ.



**3-4-3. SPECIFY VOID TIME**

Aircraft must depart within the assigned AVANA for the purpose of providing separation between altitude reservations. Normal AVANA will be 1 hour.

**3-4-4. RESCHEDULING**

If a mission is to be delayed beyond the AVANA time, rescheduling:

- a. Will normally be in 24-hour increments after the original schedule.
- b. Can be in less than the time specified above, subject to CARF discretion and after approval

from the affected ARTCC/CERAP.

**3-4-5. DELAY NOTIFICATIONS**

As soon as the delay becomes apparent, notify the ALTRV approval authority and provide all available updated information.

**3-4-6. EN ROUTE TIMING**

In a non-radar environment, the aircraft shall advise ATC if actual fix timing will be more than plus or minus 5 minutes from the planned ALTRV en route fix estimate.

## Section 5. ORIGINATOR RESPONSIBILITIES

### 3-5-1. TWO OR MORE COMMANDS

When two or more commands within the same service are involved in an exercise, the responsibility for planning and processing an ALTRV APREQ shall be accepted by each command unless notice is given to CARF that one command has accepted the responsibility for the other commands.

### 3-5-2. TWO OR MORE SERVICES

When two or more services (USAF, USA, USN, USMC) are involved in an exercise, the responsibility for planning and processing an ALTRV APREQ shall be accepted by each service unless notice is given to CARF that one service has accepted the responsibility for the other service(s).

### 3-5-3. MISSIONS REQUIRING EXTENSIVE ATC SUPPORT

Missions which originate on a Joint Chiefs of Staff or Service Headquarters level (USAF, USA, USN, USMC) and require extensive ATC support, shall be initially coordinated with FAA Headquarters, ATO-1, 800 Independence Avenue, S.W., Washington, DC 20591.

### 3-5-4. PROJECT OFFICER

The originator of the ALTRV request shall assign a project officer and an alternate project officer for each proposed ALTRV APREQ. These project officers shall be thoroughly familiar with the requirements set forth in this chapter and available for coordination until the ALTRV mission departure. DSN and commercial phone numbers shall be specified in Item G of the ALTRV APREQ in accordance with paragraph 3-9-2 h(2) and (3).

a. The project officer shall coordinate the ALTRV APREQ with the following:

1. The ARTCC/CERAP in whose area the flight originates to obtain acceptable departure procedures up to the first cruising altitude. Additional data shall be provided in accordance with Section 9. of this chapter.

2. The using agency for approval to transit special use airspace; e.g., prohibited, restricted, warning, or military operations areas, etc.

3. The designated scheduling unit for approval to use or transit published refueling tracks/anchors and military training routes.

4. The appropriate FAA Liaison Officer.

b. It shall be the responsibility of the project officer to ensure receipt of the approvals specified in subparagraph a.

c. The project officer shall ensure that the ALTRV APVL and any subsequent amendments are coordinated with the aircrews.

d. In addition to the items listed in Section 9 of this chapter, the following information shall be included in the remarks section, Item G, of the ALTRV APREQ:

1. ARTCC/CERAP's in which ALTRV is flight planned.

2. ECM and chaff information, including chaff authorization number, if applicable. (See paragraph 3-1-3 f.)

3. All individual flight plan from this point (IFPPF) routing and altitude information to the BEGIN ALTRV point and from the ALTRV termination point. Location, routing (IFPPF), and procedures for airborne spares to drop out/exit the ALTRV.

4. All special use airspace and ATC assigned airspace (ATCAA) for which approval has been obtained.

e. It shall be the responsibility of the originator and the project officer to ensure that ALTRV APREQ's are submitted so as to reach CARF not later than the time criteria specified in paragraph 3-4-2. Proposed departure times of No-Notice missions shall be included. All mission aircraft, and other aircraft as deemed necessary by coordination between CARF and the project officer, shall be included in the ALTRV APREQ's.

1. If the ALTRV APREQ is to be submitted by data communications equipment, the detailed information, format, and method of transmission shall be in accordance with Section 9. and Section 10. of this chapter.

2. If the ALTRV APREQ is to be submitted by mail, hand-carried, etc., it shall be recorded on the altitude reservation flight plan form which is printed and provided by the military commands.

f. When an ALTRV APREQ is mailed from a military base or transmitted via the DCS, the departure procedures must have been previously coordinated by the project officer with the associated ARTCC/CERAP.

g. The final approval authority will be determined in accordance with paragraphs 3-2-4 and 3-3-2. CARF/EUCARF/PACMARF and all U.S. ARTCC/CERAP's shall be addressed when missions will enter their areas of responsibility. Missions which do not depart from within the U.S. CTA/FIR should be addressed to the appropriate altitude reservation unit.

h. The project officer shall be responsible for informing the final approval authority of any mission delay request.

i. The project officer shall ensure that aircraft commanders are briefed on the importance of maintaining planned ALTRV en route timing.

j. The project officer shall ensure that all air traffic facilities are provided aircraft call signs in the original submission of the ALTRV APREQ in accordance with existing directives.

### **3-5-5. ALTRV'S ENTERING U.S. CTA/FIR**

Military command headquarters located outside U.S. CTA/FIR proposing to conduct an exercise that will encompass activities within the U.S. CTA/FIR should effect coordination with CARF.

### **3-5-6. NO-NOTICE AND/OR DO NOT PASS TO AIR DEFENSE RADAR (NOPAR) MISSION**

Every precaution shall be taken to safeguard the execution time and date of a No-Notice mission.

a. Information concerning NOPAR missions shall be withheld from specified air defense radar facilities and/or specified interceptor squadrons.

b. The following procedures apply:

1. If required, the project officer or the FAA Liaison Officer shall furnish the concerned FAA facilities, in separate correspondence, a list of "trusted agents" or "eyes only officers" with whom the time and dates of the No-Notice mission may be discussed.

2. The project officer shall specify "NOPAR" in the remarks sections of an ALTRV APREQ when mission information is to be withheld from all air defense radar facilities and fighter interceptor squadrons. When mission information is to be withheld only from specific Air Defense Radar Facilities and/or fighter interceptor squadrons, the facilities and/or squadrons shall be added to the ALTRV APREQ immediately after "NOPAR."

## Section 6. SEPARATION

### 3-6-1. PLANNING/APPROVAL OF APREQ'S

The following separation minima shall be applied in the planning and approval of ALTRV's:

a. Vertical - Standard minima specified for the area of operation.

b. Lateral - Standard minima specified for the area of operation. When a mission requires operation on a broad frontal width, separation shall be provided in accordance with FAA Order 7110.65 between the outer limits of such flight or formation and non-participating aircraft.

c. Longitudinal and Crossing

1. Domestic - 30 minutes.
2. Oceanic - 60 minutes.

### 3-6-2. MILITARY AUTHORITY ASSUMES AUTHORITY FOR SEPARATION OF AIRCRAFT (MARSA)

When less than the separation in paragraph 3-6-1 exists, MARSA shall apply as follows:

a. The originator of an ALTRV APREQ shall accept the responsibility for separation:

1. Between all aircraft in the ALTRV.
2. Between aircraft in the ALTRV and other aircraft or groups of aircraft utilizing the same "mission" name even though the flights originate from different air bases, division headquarters, and/or military commands.

b. When MARSA is applied between missions of different mission names, include a statement in the remarks section of the flight plan and ALTRV APREQ that includes the name(s) of the missions with which separation responsibility is accepted.

c. MARSA authorizes an ATC facility to clear a tanker to a common altitude with a receiver even though the altitude has not been processed as an ALTRV request. This information and the identification of the other aircraft must be included in the flight plan(s).

### 3-6-3. IN-FLIGHT SEPARATION

ATC facilities shall provide separation in accordance with FAA Order 7110.65 unless MARSA is applicable in accordance with paragraph 3-6-2.

### 3-6-4. POSITION REPORTS

a. In a non-radar environment or when requested by the controller, the first and last aircraft in a stream formation shall make position reports at each required reporting point and shall indicate position in the formation.

#### NOTE-

*In Class A airspace, controllers may find it necessary to obtain information from pilots conducting certain military operations over and above that normally required for IFR flight.*

b. The cell leader shall make position reports for the cell formation at each required reporting point.

#### NOTE-

*Caution should be exercised by the pilot and the controller during the departure and/or arrival phase of the ALTRV to avoid referring to the lead aircraft and succeeding aircraft as a cell unless the definition of a cell formation is complied with.*

c. Aircraft in an ALTRV, other than in a stream or cell formation, shall make position reports as individual aircraft or flight plan formation.

d. ATC facilities may authorize communications out/reduced communications procedures in lieu of radio position reporting if required by military operations and prior coordination has been accomplished with affected ATC facilities.

### 3-6-5. USE OF AIRSPACE THROUGH ALTRV

Approval of airspace for an ALTRV shall not preclude ATC from using such airspace, provided that separation is applied in accordance with FAA Order 7110.65 between other aircraft and aircraft within the ALTRV.

## **Section 7. SPECIAL/EMERGENCY ALTRV'S**

### **3-7-1. INTERNATIONAL PRESIDENTIAL FLIGHTS**

When requested, ALTRV's shall be provided for aircraft transporting the President or the Vice President when conducting international flights. Headquarters USAF will authorize a Class One order of precedence for those flights.

a. The appropriate military authority will provide CARF with detailed flight plan information, both to the destination and return, as far in advance as possible.

b. CARF shall arrange for ALTRV's for Presidential and Vice Presidential rescue support aircraft.

### **3-7-2. PROCESSING WAIVERS**

a. ALTRV requests which do not qualify under the provisions of this section and cannot otherwise be accomplished will be handled on an individual basis.

b. ALTRV requests shall be forwarded, with accompanying justification, to the David J. Hurley Air Traffic Control System Command Center, ATTN: Central Altitude Reservation Function, 13600 EDS Drive, Suite 100, Herndon, VA 20171-3233. A waiver will be issued by CARF if deemed appropriate.

c. All originating units shall process such requests through channels to the appropriate Command Headquarters for transmittal to CARF.

### **3-7-3. EMERGENCY ALTITUDE RESERVATIONS**

CARF or an ARTCC/CERAP may approve a request for an emergency ALTRV if the safety of life or property is threatened. Operations such as search and rescue, hurricane evacuation, or mass air evacuation may be considered in this category. When an ARTCC/CERAP approves an ALTRV under this paragraph, the following actions shall be taken:

a. The facility shall advise CARF and other concerned ARTCC/CERAP's of the approved ALTRV in detail by the most expedient means.

b. Upon receipt of such notification, CARF shall take immediate action to preclude possible conflict between ALTRV's previously approved by CARF and the emergency ALTRV.

## Section 8. ALTITUDE RESERVATION NOTAM'S

### 3-8-1. CRITERIA

The issuance of an altitude reservation NOTAM, except as provided in paragraph 3-8-2c, involving the U.S. control area/flight information region (CTA/FIR) shall be governed by the following procedures:

a. Issue an altitude reservation NOTAM for:

1. All Stationary Altitude Reservations.

**NOTE-**

*CARF, ARTCC, or CERAP (whoever is the final approval authority) shall issue the NOTAM.*

2. Selected Moving Altitude Reservations, whenever a portion of the ALTRV includes air refueling and/or other unusual activity below FL 180, or when the activity covers a broad frontal width.

b. Describe the area which is in use and the duration of the ALTRV. Reference shall not be made to the type of activity within the ALTRV unless the originator has agreed to the publication of this information.

**EXAMPLE-**

*ZNY CARF NR. 270 ON GOLF ONE STATIONARY  
RESERVATION WITHIN A 100NM RADIUS OF  
3700N 4500W SFC-FL270 WEF  
9703231500-9703231700*

### 3-8-2. FORMULATION AND DISSEMINATION

a. The final approval authority, CARF or the appropriate ARTCC/CERAP, is responsible for the formulation and dissemination of appropriate NOTAM's for those ALTRV's which they have approved in their area of jurisdiction.

b. Coordination shall be effected between adjacent ARTCC/CERAP's if it will permit consolidation of NOTAM information as prescribed above for the issuance of a joint altitude reservation NOTAM.

c. Altitude reservation NOTAM's shall not be issued under the following conditions:

1. If the originator of an ALTRV request specifies "Secure Handling" by assigning one of the following classifications to the request:

(a) Confidential.

(b) Secret.

(c) Top Secret.

2. The mission is a No-Notice mission, except that appropriate altitude reservation NOTAM's may be issued after specific instructions have been received from the originator of the mission.

3. On portions of an ALTRV which are conducted in accordance with published activities; e.g., Military Training Routes, etc.

## Section 9. ALTITUDE RESERVATION APPROVAL REQUEST (ALTRV APREQ), FORMAT, AND AMENDMENTS

### 3-9-1. ALTRV APREQ's

The originator shall file an ALTRV APREQ with CARF in accordance with the instructions contained in this order unless specific guidance or instruction has been pre-coordinated with CARF/ARTCC/CERAP.

a. Whenever possible, ALTRV APREQ's should be sent unclassified.

b. If sent classified or encrypt for transmission only (EFTO), advise CARF of the earliest time the message may be declassified or EFTO may be dropped; i.e., 24 hours prior to departure, upon departure, etc.. Classified or EFTO missions cannot be coordinated with international facilities or agencies unless written permission is given by the unit or command that files the APREQ. Advise CARF of the earliest declassification time in item G of APREQ.

### 3-9-2. FORMAT

In order to accomplish timely data processing by the CARF automated system, ALTRV APREQ's must be properly formatted prior to submission to CARF, or other approval authority, utilizing key phrases outlined in this paragraph and Section 10, Flight Path Format Components. Indicate the following items on all ALTRV APREQ messages:

#### NOTE-

*N/A may be used in a stationary ALTRV for items A thru C, E thru F, when applicable.*

a. Heading: "ALTRV APREQ," the mission name, and a slash "/" followed by the mission class. ALTRV APREQ's filed in support of another ALTRV shall file the same mission name and mission class, followed by the word "SUPPORT."

#### EXAMPLE-

ALTRV APREQ CORONET WEST 450A/7  
ALTRV APREQ FULL UP 95-4/8  
ALTRV APREQ FULL UP 95-4/8 SUPPORT

b. Item A, Call Sign(s): "A" followed by the call sign(s) of all aircraft which will depart together from the location specified in item C. Call signs shall not exceed seven alphanumeric

characters in length; the tactical call sign is a pronounceable word of 3 to 6 alphabetical characters followed by a 4, 3, 2, or 1 digit number. When there are multiple flights with the same tactical call sign, combine the numbers portion by separating consecutive series with a dash and individual numbers with a comma.

#### NOTE-

*Do not include the call signs of aircraft which file individual flight plans to join the ALTRV en route. These will be noted in the Item D or G.*

#### EXAMPLE-

A. BONE11-13

*(This indicates BONE11, BONE12 and BONE13).*

A. HAPPY32,34

*(This indicates HAPPY32 and HAPPY34).*

A. PINE80,81 MOOSE31-33

*(This indicates PINE80, PINE81, MOOSE31, MOOSE32, MOOSE33).*

c. Item B, Number and Type of Aircraft: "B" followed by the number of aircraft if more than one; heavy indicator "H," if appropriate; type of aircraft; and equipment suffix code. The items should be specified in the same order that the call signs appear in Item A, and the number of aircraft should agree with the number of call signs.

#### EXAMPLE-

B. 3HB52/R

*(3 is the number of aircraft, H indicates heavy, B52 is the type of aircraft, and R is the equipment suffix code).*

d. Item C, Point of Departure: "C" followed by the four-letter ICAO location identifier. When the point of departure is classified, indicate "ZZZZ." Do not include the departure point of aircraft that file individual flight plans which join the ALTRV en route.

#### EXAMPLE-

C. KJAX

C. PANC

e. Item D, Route of Flight, Elapse Times, and Altitudes: "D" followed by the route of flight, elapsed times between segments on the routes, and the altitude to be flown for each segment (fix-time-event sequence).

1. Route of Flight: The route of flight will include events or actions within the route and may

be composed of any number of flight paths as defined in Section 10, Flight Path Format Components. Route of flight for operations above FL 180 should be defined in relation to established high altitude navigation aids only. The route of flight segment for a stationary ALTRV shall adhere to the guidelines outlined in paragraph 3-10-4 a-e.

**NOTE-**

*When tanker aircraft do not depart with the ALTRV but join up at a later point, provide the following information, at the point at which they join the ALTRV: "JOIN"; the call sign; the number, type and equipment suffix, as in c. above; "IFPPF"; and the point of departure.*

**EXAMPLE-**

*[JOIN JOE53 KC10/R IFPPF PHIK]*

2. Elapse times: Times should be specified in four digits which express hours and minutes. Indicate cumulative time elapsed in one of the following manners:

(a) When timing begins upon departure, from the point of departure.

**EXAMPLE-**

*0012 (This indicates 12 minutes from the time of departure).*

*0509 (This indicates 5 hours and 9 minutes from the time of departure).*

(b) When timing begins over the first fix of a partial route, indicate the beginning point as the first fix in Item D, with the elapse time of "0000."

**NOTE-**

*See paragraph 3-9-2 g, for associated language required in Item F, Departure Information.*

**EXAMPLE-**

*((PR FL250 DKB 090/025 0000 ALTRV BEGINS*

3. Altitudes: Indicate the altitude in three digits expressed in hundreds of feet; "SURFACE" may be used to indicate altitudes which extend from the surface of controlled airspace. Precede the altitude with "FL" for altitudes of 18,000 feet or above. Insert "B" between the lower and upper limits of a block altitude.

**NOTE-**

*Flight levels may be used in oceanic airspace below 18000 feet if required to set altimeter to 29.92.*

**EXAMPLE-**

*090 (indicates 9,000 feet)*

*FL 190 (indicates 19,000 feet)*

*FL 230B250 (indicates block altitudes of 23,000 feet through 25,000 feet).*

f. Item E. Destination: "E" followed by the four-letter ICAO location identifier and the cumulative elapsed time (optional) to the destination, expressed as in e. 2, above.

1. When all aircraft proceed to the same destination, no additional information is needed.

2. When there are multiple destinations, specify the call sign and location identifier for the destination for all aircraft that remain in the ALTRV at ALTRV end point as follows:

(a) Call sign.

(b) Location identifier for the destination.

(c) Elapsed time. (Optional)

3. When the destination is classified, indicate "ZZZZ"; no elapsed time should be shown.

**EXAMPLE-**

*E. PHNL 0405*

*E. CLAN80,81 PHNL ZESTY12 PHNG*

*E. ZZZZ*

g. Item F, Departure Information: "F" followed by "ETD" and:

1. When timing begins upon departure, the date time group of the estimated time of departure.

(a) If a single group is departing, indicate the day of the month and UTC time, expressed in six digits, and the month and year of departure.

(b) If more than one group is departing, indicate the call sign for each group, in the order of departure, followed by the date time group.

(1) For the first group, specify the date time group as in (a), above.

(2) For successive groups, indicate only the day of the month and UTC time, expressed in six digits.

2. When timing begins over the first fix of a partial route, the phrase "ALTRV BEGINS OVER (fix) AT," followed by the date time group, as specified in 1., above.

**EXAMPLE-**

*ETD ALTRV BEGINS OVER DKB 090/025 AT 161815 MAY 1996*



3. Interval Between Aircraft (ADMIS): The ADMIS should be specified for any group of more than one aircraft. Indicate one of the following:

(a) "ADMIS" followed by two digits which indicate the number of minutes between departing aircraft in the group.

(b) "ADMIS" followed by two digits and "SEC" to indicate the number of seconds between departing aircraft in the group.

(c) "FRMN" to indicate that departing aircraft are considered as one and will depart in less than 30 second intervals.

4. AVANA Time: "AVANA" followed by the date time group, expressed in six digits.

**EXAMPLE-**

F. ETD 020030 JAN 1997 020130

F. ETD BONE11-16 020030 JAN 1997

ADMIS 30 SEC

BONE17,18 020100 FRMN

BONE19 020130 AVANA 020230

h. Item G, Remarks: "G" followed by:

1. "TAS." Include the airspeed in three digits and "KTS." Indicate if cruise and air refueling speed are different.

2. "PROJECT OFFICER." Include the name, grade, and DSN and commercial phone numbers of the project officer.

3. "ALTERNATE PROJECT OFFICER." Include the name, grade, and DSN and commercial phone numbers of the alternate project officer.

4. "ADDITIONAL INFORMATION." Include any remarks pertaining to the execution of the mission; i.e., MARSA, NOPAR, ECM activity, IFPPF routings, etc.

**NOTE-**

A MARSA statement must be included if the aircraft will fly less than standard separation.

5. "ARTCC." List the names of all ATC facilities which will be concerned with the ALTRV.

6. "REQUEST COPY OF ALTRV APVL BE SENT TO." (Optional) List any additional parties that need a copy of the ALTRV APREQ. (See paragraph 3-2-4a.)

**EXAMPLE-**

G. TAS: 430KTS CRUISE/AIRFL

G. TAS: 440KTS CRUISE 410KTS AIRFL

PROJECT OFFICER: CAPT PAUL DSN

555-5555/COMM 111-555-1111

ALTERNATE PROJECT OFFICER: CAPT

BARTKO DSN 555-5556/COMM

111-555-222

ADDITIONAL INFORMATION: MARSA

ALL BUSY LEADER OSCAR AIRCRAFT.

ARTCC CONCERNED: ZNY ZDC CARU EUCARF

REQUEST COPY OF ALTRV APVL BE SENT TO

438MAW MCGUIRE AFB NJ//DO

**3-9-3. ALTRV APREQ AMENDMENTS**

When necessary to amend an ALTRV APREQ, indicate the following:

a. Heading: "Amendment to," followed by the heading information as specified in the original APREQ.

b. Date Time Group: "ROMES" (Reference our message) followed by the date time group of the original APREQ message.

c. Estimate Time of Departure: "ETD" followed by the date time group specified in Item F on the original APREQ.

d. Amendment(s): "AMEND" followed by the item(s) to be amended and the amendment; indicate the specific item on the original APREQ; such as, Item A, Item B, etc.

e. Ending: "ALL ELSE REMAINS THE SAME."

**EXAMPLE-**

AMENDMENT TO ALTRV APREQ SHARP

SHOOTER 97-1/8

ROMES 111012 ETD 191500 FEB 1997

AMEND ITEM A AND B

ITEM A RAVEN01-07

ITEM B 7EF111/R

ALL ELSE REMAINS THE SAME

## Section 10. FLIGHT PATH FORMAT COMPONENTS

### 3-10-1. INTRODUCTION

This section supplements paragraph 3-9-2. It contains detailed instructions on the format of flight path components and provides examples of properly formatted ALTRV APREQ's.

### 3-10-2. DEFINITION

A flight path is defined as a consecutively listed set of fix/time/event groups in which the fixes in the set will be successively overflown. A route of flight may be composed of any number of flight paths; aircraft may merge or separate at various points along the route of flight.

### 3-10-3. FORMAT

Flight paths are separated by the phrases defined in paragraph 3-10-4 which begin and/or end events along the route. The repetition of previously listed fixes is to be avoided. When flight paths merge or separate, the last fix listed in a flight path should be the point of merger or separation. Accordingly, the first fix listed in a flight path should not repeat the point of merger or separation.

a. Fixes should be used in one of the following formats:

1. A two to five letter NAVAID identifier, location identifier, or fix name.

#### EXAMPLE-

DB	Burwash NDB
OKC	Oklahoma City VORTAC
KNTU	NAS Oceana
DENNS	The fix DENNS

2. A fix/radial/distance; specify the NAVAID, the radial in degrees magnetic, a slash "/" and the distance in nautical miles, expressed in three digits.

#### EXAMPLE-

RDF 070/040 (This indicates 40 NM DME on the 70 degree radial of the RDF NAVAID).

3. A latitude/longitude expressed in degrees and minutes with the appropriate "N," "S," "E," "W" suffix.

#### NOTE-

Normally, fix/radial/distance shall be utilized for fixes over the conterminous U.S. Latitude/longitude shall be used for tracks flown over oceanic and Canadian airspace unless there is a published fix available.

#### EXAMPLE-

3030N 17500W (This indicates 30 degrees 30 minutes north latitude, 175 degrees west longitude).

b. Altitudes should be in one of the following formats:

1. Below 18,000 feet - expressed in hundreds of feet.

#### NOTE-

Flight levels may be used in oceanic airspace below 18,000 feet if required to set altimeter to 29.92.

2. Flight levels - "FL" followed by the three digits of the altitude/flight level (18,000 feet and above).

3. Block or range of altitudes:

(a) Below 18,000 feet - the lower limit, "B," then the upper limit expressed in hundreds of feet.

(b) Flight levels - "FL," the lower limit, "B," and the upper limit expressed in three digits of altitude/flight level.

#### NOTE-

When using two or more altitudes, the base altitude should be the correct altitude for the direction of flight.

#### EXAMPLE-

110	11,000 feet
FL210	Flight level 210 (21,000 feet)
FL210B250	FL210 through FL250

c. Airways should be in one of the following formats:

1. Victor airways - "V" followed by the one, two or three digit number of the airway.

2. Jet routes - "J" followed by the one, two or three digit number of the route.

### 3-10-4. COMPONENTS

The following phrases are to be used in Item D when filing an ALTRV APREQ. Unless otherwise noted, these phrases refer to events that occur

immediately "following" the specified fix/time. The exceptions are LVLOF BY, cross events and the begin partial route statement. Only certain listed phrases are known to the CARF computer system. Any use of non-standard phrases in Item D, unless contained within brackets [ ], will prevent timely processing of the ALTRV. The use of brackets for non-standard phrases will cause the CARF computer to skip over the phrase and not utilize it for plotting or conflict detection. As used in this order, the phrases set forth below shall have the meaning indicated.

a. **ACCELERATE TO SUPERSONIC.** Supersonic speed will commence at the fix/time which precedes this phrase. (See End Supersonic.)

**EXAMPLE-**

*BOS 0200 ACCELERATE TO SUPERSONIC*

b. **AIRFL BEGINS or BEGIN AIRFL.** Point at which air refueling begins.

**EXAMPLE-**

*VUZ 0025 AIRFL BEGINS  
PLB 216/053 BEGIN AIRFL*

c. **AIRFL ENDS or END AIRFL.** Point at which air refueling ends.

**EXAMPLE-**

*LMN 0139 AIRFL ENDS  
SAV 0212 END AIRFL*

d. **ARCP.** Point at which the receiver arrives in the observation/refueling position with respect to the assigned tanker.

**EXAMPLE-**

*RZS 0029 ARCP*

e. **ARIP.** Point at which the receiver enters the refueling track, initiates radio contact with the tanker, and begins maneuver to join up.

**EXAMPLE-**

*RZS 0019 ARIP*

f. **BEGIN ALT DPRT RTE or ((AR.** Specifies two or more alternate routes from the point of departure. This should either be the first phrase of Item D or immediately follow a previous alternate departure route. The phrase should be followed by:

1. Alternate departure route description enclosed in square brackets "[ ]."

2. Call signs of the aircraft which will utilize the route; this may be omitted if the route will be used by all of the aircraft specified in Item A.

3. Altitude.

**EXAMPLE-**

*BEGIN ALT DPRT RTE [OPTIMUM SOUTH  
RUNWAY] FL210B230  
((AR [CALDI SIDOR] BONE13-19 FL220B240  
((AR [NORTH DEPARTURE] BONE13-19  
FL190B210  
((AR [SOUTH DEPARTURE] BONE13-19  
FL190B210*

g. **BEGIN BRANCH RTE or ((BR.** A track of an ALTRV that is defined from the breakaway point from a common route to the next fix or final destination. The phrase should be followed by:

1. Call signs of aircraft which will utilize this route.

2. Altitude, if the point of separation is the departure point.

3. **DPRT ORBIT AT (time).** If the aircraft separate at an orbital point ("AT" is optional); or **EXIT STATIONARY RESERVATION AT (fix/time)** or **EXIT MANEUVERING AREA AT (fix/time)** if aircraft separate upon exiting a stationary reservation.

4. **FROM (fix).** Indicates the point at which aircraft taking the branch route separate from the main body; the phrase is followed by the name of the fix and the time.

**NOTE-**

*A branch route starts from a point on an existing ALTRV, whereas a partial route starts from a non-ALTRV section, such as an IR route, warning area exit point, etc.*

**EXAMPLE-**

*BEGIN BRANCH RTE LUCID98,99 FL210B230  
FROM STL 0200  
((BR LUCID101-103 FL250B260 FROM STL  
BEGIN BRANCH RTE LUCID98,99 FL200B220  
DPRT ORBIT AT 0232  
((BR LUCID101-103 FL230B250 EXIT STA-  
TIONARY RESERVATION AT 3000N 6600W 0330.*

**h. BEGIN CMN RTE or BEGIN CMN RTE/TIMING/ALT or ((CR.** - Defines a route formed by the merger of two or more flight paths when "JOIN" is not used. This phrase should follow all of the branch routes which merge into the common route. It should be followed by:

1. Call signs of all aircraft merging into this route at its starting point.

2. Altitude.

3. FROM (fix/time). (optional) Indicates the point at which the aircraft merge; the phrase is followed by the name of the fix and the time.

**EXAMPLE-**

*BEGIN CMN RTE BONE11-15 LUCID98,99  
FL190B220 FROM MEM 0200  
((CR BONE11-14 FL210B230 FROM STL 0200*

**i. BEGIN (number) NM FRONT (number) NM EITHER SIDE OF A CENTER LINE (fix/time)...(fix/time) FRONT ENDS.** Describes an event which occupies a frontal width, measured perpendicular to the direction of flight, which is greater than normal. The broad front event is the specified number of nautical miles wide and is centered on a line of the specified fixes; two or more fixes should be specified.

**EXAMPLE-**

*DENNS 0321 BEGIN 60NM FRONT 30NM EITHER  
SIDE OF A CENTER LINE FUFFE 0406 DANKA  
0451 FRONT ENDS*

**j. BEGIN PARTIAL RTE or ((PR or ((...** Used when it is desired to start the ALTRV en route. There are four types of partial route formats:

1. A PR may be used when the pilot wishes to be expedited on departure or for security reasons.

**EXAMPLE-**

*((PR FL270B280 AEX 0200 ALTRV BEGINS LFK  
0230 MCN 0300.*

2. A PR may be used for an ALTRV coming from an international departure point inbound to U.S. airspace.

**EXAMPLE-**

*((PR FL240B260 4300N 3500W 0300 4300N 4000W  
0340 4300N 4500W 0410.*

3. A PR may be used for an aircraft recovering from special use airspace and returning back to destination on an ALTRV.

**EXAMPLE-**

*AEX 0300 ALTRV ENDS IFPP INTO MORRIS  
MOA DLA 1+00.  
((PR FL270B290 AEX 260/040 0400 ALTRV  
BEGINS DRCT AEX 0420 FTW 0440.*

4. PR may be used for an ALTRV beginning over a fix at a specific time.

**EXAMPLE-**

*((PR FL270B290 ...ALTRV BEGINS OVER AEX AT  
0000 (1340Z) LFK 0020 CEW 0120.  
(In item F)  
F. ETD: ALTRV BEGINS OVER AEX AT 121340  
ADMIS 20 SEC AVANA OVER AEX 121440*

**k. CELESTIAL NAVIGATION (CELNAV).** This may be filed for use in a Broad Front.

**EXAMPLE-**

*FIX 0321 BEGIN 30NM FRONT CEL-NAV 15NM  
EITHER SIDE OF A CENTER LINE FIX 0355 FIX  
0421 FIX 0433 FRONT ENDS FIX 0500.*

**l. CLMB.** Indicates that the new altitude range extends above the old altitude and does not include all of the previous altitudes. A level-off point (LVLOF) is required.

**EXAMPLE-**

*FL280B310 LVLOF BY FSD 319/060 0213 OBR  
0222 MOT 0252 CLMB FL390 LVLOF W/I 20NM*

**m. CMPS.** Indicates that the new altitude includes some of the previous altitude range but does not extend above or below the old altitude range. A level-off point (LVLOF) is required.

**EXAMPLE-**

*FL280B310 LVLOF BY FAM 134/067 0054 FAM  
0104 LMN 0139 CMPS FL310 LVLOF BY FSD 0205*

**n. CROSS (fix/time) AT (altitude) OR ABOVE/BELOW.** Restricts the climb or descent to an altitude so that the ALTRV will be within the specified altitude range when passing over the specified fix. A level-off point (LVLOF) is required.

**EXAMPLE-**

*CLMB FL260B280 CROSS CAP 0105 AT FL250 OR  
ABOVE LVLOF BY BVT 0210*

**o. DRCT.** Utilized to eliminate doubt as to when an action occurs.

**EXAMPLE-**

*FROM MEM DRCT LIT 0250*

p. DSND. Indicates that the new altitude range extends below the old altitude range and does not include all of the previous altitudes. A level-off point (LVLOF) is required.

**EXAMPLE-**

*FL390 LVLOF BY VUZ 0025 DSND FL280B310  
LVLOF BY FAM 134/067 0054*

q. ENCAN or EXCAN. Point and time at which aircraft will enter or exit Canadian airspace. These fixes must be defined as both a fix/radial/distance and a latitude/longitude; one of these must be enclosed in square brackets “[ ],” but not both.

**EXAMPLE-**

*YSC 205/026 [4500N 7200W] 0206 ENCAN DRCT  
YIB 0230 PQI 330/28 [4716N 9130W] 0300 EXCAN*

r. END CMN RTE. Point at which the aircraft will separate into two or more routes.

**EXAMPLE-**

*((CR BONE11-14 FL210B230 STL 0200 MKC 0240  
END CMN RTE*

s. END RTE or ). A general terminator for routes; the fix/time which precedes this event is the final point of the route (LAND, IFPP, END CMN RTE, JOIN CMN RTE, or “...” may be substituted for this phrase. It does not indicate the disposition of the aircraft at the point of termination.

**EXAMPLE-**

*STL 0200 END RTE  
STL 0200 ))  
STL 0200 LAND  
STL 0200 IFPP  
STL 0200 END CMN RTE  
STL 0200 JOIN CMN RTE  
STL 0200 ...*

t. END SUPERSONIC. Point where supersonic speed will cease. (See Accelerate to Supersonic.)

**EXAMPLE-**

*BOS 0200 ACCELERATE TO SUPERSONIC 4200N  
6700W 0230 END SUPERSONIC*

u. ENTER STATIONARY RESERVATION or ENTER MANEUVER AREA or ENTER TIMING TRIANGLE. Utilized whenever it is desired to reserve a stationary volume of airspace within a moving ALTRV for some period of time; point and time of entry are indicated by the

fix/time which precedes the phrase. The phrase should be followed by:

1. Definition of the vertical altitude range of the stationary reservation; may be omitted if the range is the same as the altitude held prior to entry into the reservation.

2. Definition of the boundary of the stationary reservation. One of the following phrases should be utilized:

(a) (number) NM EITHER SIDE OF A LINE BETWEEN (fix)...(fix). Defines a corridor the indicated number of nautical miles wide centered on the line segments which connect the specified fixes; specify two or more fixes.

(b) BNDD BY (fix)(fix)...(fix) or WITHIN AN AREA BNDD BY (fix)(fix)...(fix). Defines an area bounded by the line segments which connect the specified fixes; specify three or more fixes.

(c) WITHIN (number) NM RADIUS OF (fix). Defines a circle with a radius of the indicated number of nautical miles centered about the specified fix.

3. EXIT AT (fix/time) or EXIT STATIONARY RESERVATION AT (fix/time) OR EXIT TIMING TRIANGLE AT (fix/time). Point and time of exit specified by the fix/time which follows the phrase.

**EXAMPLE-**

*UPP 0123 ENTER STATIONARY RESERVATION  
090B110 WITHIN AN AREA BNDD BY UPP MUE  
IAI IAI 320/050 EXIT AT UPP 0223  
OBH 0345 ENTER MANEUVER AREA 20NM EI-  
THER SIDE OF A LINE BETWEEN OBH ONL EXIT  
AT ONL 0358  
OBH 0123 ENTER TIMING TRIANGLE BNDD BY  
OBH ONL ONL 180/050 EXIT TIMING TRIANGLE  
AT ONL 0223  
UPP 0305 ENTER MANEUVER AREA WITHIN  
50NM RADIUS OF UPP EXIT MANEUVER AREA  
AT UPP 200/050 0345*

v. IBASF (number). Point and time at which aircraft will initiate a stream formation with the aircraft separated by the specified number of minutes.

**EXAMPLE-**

*TUL 0038 IBASF 5  
TUL 0038 IBASF 12*

**NOTE-**

*The system will not modify the ALTRV length to accommodate the specified spacing. If the spacing will place aircraft outside the reservation, the AVANA time should be increased accordingly.*

w. IFPPF (Individual Flight Plan From Point). Point and time at which aircraft will proceed to their destination on individual flight plans. This event is used to allow the controller to pre-plan clearances prior to the break-away fix. Most foreign nations mandate IFPPF information. File all IFPPF routing information to and from the ALTRV:

1. To join the ALTRV.

2. When receiver(s) and/or tankers leave ALTRV en route.

**EXAMPLE-**

*Item D: ...OKC 0310 LEAVE EXXON02 IFPPF TO KGSB*

*Item G: ...IFPPF RTG FOR EXXON02 FROM OKC...REQ CLMB FL310 DRCT CAP FAM MEM JAN*

3. When receiver/tanker buddy launch and terminate ALTRV en route.

**EXAMPLE-**

*Item A: TIGER1-10 EXXON3-5*

*Item D: ... FIX 0310 FIX 0340 ALTRV ENDS IFPPF*

*Item G: IFPPF RTG FOR TIGER1-10 FROM FIX ...REQ FL260B270 DRCT FIX FIX FIX DESTINATION FIX.*

*IFPPF RTG FOR EXXON3-5 FROM FIX...REQ CLMB FL290 DRCT FIX FIX FIX DESTINATION FIX.*

4. When receiver/tanker join the ALTRV en route and terminate the ALTRV en route, IFPPF routing information is required for both receiver and tanker to and from the ALTRV.

5. When receivers file air spares. The project officer is required to file IFPPF routings for air spares from the break away FIX back to destination.

**EXAMPLE-**

*Item D: FIX 0340 LEAVE AIR SPARES MAZDA 27-28 IFPPF TO KDYS FIX 0400*

*Item G: IFPPF RTG FOR AIR SPARES MAZDA 27-28 FROM FIX...REQ CLMB FL280 DRCT FIX FIX FIX DESTINATION FIX.*

x. JOIN (call sign). Point and time at which the specified aircraft merge with aircraft from another route on a common route. (See Leave)

**EXAMPLE-**

*FSD 0213 ARCP JOIN INSET34*

y. JOIN CMN RTE TO (fix). Point at which aircraft will join a route described on another ALTRV. The phrase is followed by:

1. Fix/time at which aircraft leave the common route, or,

2. "END" when the aircraft will proceed with the other ALTRV to destination, or ALTRV ending point.

**EXAMPLE-**

*JAX 0155 JOIN CMN RTE TO MIA 0344*

*JAX 0245 JOIN CMN RTE TO END*

z. LAND. Point at which aircraft will land.

**EXAMPLE-**

*IAD 0534 LAND*

aa. LEAVE (call sign). Point and time at which the specified aircraft are to separate from the route being defined. This phrase is used in the following circumstances:

1. When it is desired to defer the description of the separating aircraft's flight path until the description of the current route is completed.

2. When the flight path of the separating aircraft is defined on another ALTRV.

3. When the flight path of the separating aircraft is not part of the ALTRV.

(See Join)

**EXAMPLE-**

*MOT 0311 LEAVE INSET34*

ab. LVLOF or LVLOF BY(fix) or LVLOF W/I. Altitude transition is to be completed "by the fix following LVLOF or LVLOF by or," within the specified number of nautical miles of the fix which precedes LVLOF W/I; this phrase is not needed when the new altitude contains all of the previous altitude.

**EXAMPLE-**

*FL250B270 FIX 0200 XPND FL250B280 LVLOF BY FIX 0220.*

ac. ORBIT W/I (number) NM RADIUS DPRT ORBIT AT (time). Utilized to orbit aircraft within the specified number of nautical miles about the

fix which precedes the phrase and to have the aircraft depart the orbit at the specified time; the use of "W/I and/or "AT" is optional.

**EXAMPLE-**

*MKC 0213 ORBIT 30NM RADIUS DPRT ORBIT AT 0233*

**NOTE-**

*When aircraft will follow the same route but depart the orbit at different times, indicate only the elapsed time of the first aircraft to depart. Information specific to individual aircraft should be placed in square brackets "[ ]."*

**EXAMPLE-**

*MKC 0213 ORBIT W/I 30NM RADIUS DPRT ORBIT 0233 IBASF 10 [BOXES06 0233 BOXES07 0243 BOXES08 0253]*

**ad.** Rendezvous (RNDZ) (call sign). Same as JOIN.

**ae.** STATIONARY RESERVATION. This is the first phrase in Item D whenever a stationary ALTRV is being utilized. The phrase should be followed by definitions of the:

1. Vertical altitude range.

2. Boundary. One of the following phrases should be utilized:

(a) (number) NM EITHER SIDE OF A LINE BETWEEN (fix)...(fix). Defines a corridor the indicated number of nautical miles wide centered on the line segments which connect the specified fixes; specify two or more fixes.

(b) BNDD BY (fix)(fix)...(fix) or WITHIN AN AREA BNDD BY (fix)(fix)...(fix). Defines an area bounded by the line segments which connect the specified fixes; specify three or more fixes.

(c) WITHIN (number) NM RADIUS OF (fix). Defines a circle with a radius of the indicated number of nautical miles centered about the specified fix.

3. Duration of the activation, by indicating "FROM (day of the month and UTC time, month and year) TO (day of the month and UTC time, month and year)."

**EXAMPLE-**

*STATIONARY RESERVATION 090B110 WITHIN AN AREA BNDD BY UPP MUE IAI IAI320/050 FROM 200035 JULY 1997 TO 260400 JULY 1997*

**af.** XPND. Indicates that the new altitude range extends above and/or below the old altitude range and includes all of the previous altitudes.

**EXAMPLE-**

*CMPS FL310 LVLOF BY FSD 0205 FSD 319/020 0207 XPND FL280B310*

**ag.** ... Point at which the aircraft will exit CARF jurisdiction and will cease to be defined.

**EXAMPLE-**

*SOK 0210...*

### 3-10-5. EVENTS THAT PRECEDE FIX/TIME

The following phrases refer to events that immediately precede the fix and time: LVLOF; CROSS; BEGIN BRANCH ROUTE, ALTERNATE ROUTE, PARTIAL ROUTE COMMON ROUTE; EXIT AT.

### 3-10-6. ALTRV APREQ EXAMPLES

The following are examples of formatted ALTRV APREQ's.

**a.** Moving ALTRV with tankers joining en route and leaving the ALTRV IFPPF:

*ALTRV APREQ BUSY LEADER OSCAR 97-1/6*

**A.** PRO01,04,06 ZESTY51-55

**B.** 3B52/A 5KC135/A

**C.** KRME

**D.** FL280B310 RAVEC GSS 325/025 0007 SYR 042/087 0018 LVLOF BY PLB 281/015 0027 PLB 216/053 0035 PLB 216/096 0041 XPND FL260B310 JOIN ZESTY56-58 3 KC135 IFPPF KGSB GSS 0049 ARIP CMPS FL260B290 LVLOF W/I 50NM DRCT SYR 273/064 0105 ARCP AIRFL BEGINS FNT 105/105 0137 LEAVE PRO01,04,06 ZESTY 56-58 IFPPF TO KRME ((BR ZESTY51-55 FL260B290 FROM FNT 105/105 0137 CMPS FL280B290 LVLOF W/I 10NM DRCT FNT 112/08242 DJB 288/022 0153 APE 001/043 0159 APE 113/034 0207 HNN 023/041 0213 HNN 0229 ENTER MANEUVER AREA BNDD BY HNN HNN 176/023 HNN 118/045 HNN 086/040 EXIT AT HNN 0229 CMPS FL280 LVLOF W/I 10NM DRCT FLM 177/046 0238 PXV 032/034 0303 CAP 0328 J80 MKC 037/031 0357 LNK 224/059 0426 CLMB FL290 LVLOF W/I 10NM ENTER MANEUVER

AREA BNDD BY LNK 224/084 LNK 176/068  
LNK 172/044 LNK 237/063 EXIT AT LNK  
224/059 0434 OBH 168/025 0442 OMA 064/033  
0501 IOW 520 DRCT SBN 253/041 0545 DJB  
288/028 0610 ETG 260/010 0635 SYR DRCT  
GSS 060/017 0709 RME 0729 LAND

E. KRME 0729

F. ETD PRO01 ZESTY51-53 290855 APR 1997  
ADMIS MITO

PRO04 ZESTY54-55 290955 ADMIS MITO

PRO06 291055 AVANA 291155

G. TAS: 430KTS CRUISE/390KTS  
AIRFL/340KTS LOW LEVEL PROJECT  
OFFICER: MAJ. STEFANZIC DSN  
555-5555/COMM 111- 555-1111

ALTERNATE PROJECT OFFICER:

CAPT. KARI DSN 555-5556/COMM 111-  
555-2222

ADDITIONAL INFORMATION: MARSA ALL  
BUSY LEADER OSCAR AIRCRAFT.

IFPPF ROUTING FOR PRO01, 04, 06 FROM  
FNT 105/105: REQ FL350 DRCT CRW PSB GSS  
060/017 RME.

ARTCC: ZBW, ZOB, ZDC, ZTL, ZID, ZJX,  
ZKC, ZMP, ZAU, INFO ZNY

ALTRV APREQ MAPLE FLAG DEPLOY 97/4

A. LION1-6

B. 6F15/R

C. KVPS

D. FL270B290 RAVEC CEW 009/024 0007 J39  
LVLOF BY MGM 0014 J39 VUZ 0025 VUZ  
333/121 0039 ARIP FAM 134/067 0054 ARCP  
JOIN NORGE99 KC135 IFPPF FROM KIAB  
AIRFL DRCT FAM 0104 LMN 0139 AIRFL  
ENDS LEAVE NORGE99 IFPPF TO KIAB FSD  
0205 J45 FSD 319/020 0207 ARIP FSD 319/060  
0213 ARCP JOIN INSET 34 KC135 IFPPF  
FROM KRDR AIRFL DRCT ABR 0222 MOT  
0252 4900N 10220W 0300 ENCAN 4940N  
10315W (MOT 304/061) 0314 AIRFL ENDS  
LEAVE INSET 34 IFPPF TO KRDR CLMB  
FL330 LVLOF W/I 20NM DRCT VLN 0348  
UOD 0355

E. CYOD

F. ETD: 111750 MAY 1997 ADMIS 20 SEC  
AVANA 111850

G. TAS: 420KTS AIRFL/510KTS CRUISE

PROJECT OFFICER: MAJ TRACY

DSN 904-4426, COMM 703-904-4426

ALTERNATE PROJECT OFFICER:

CAPT KELLY DSN 904-4400, COMM  
703-904-4427

ARTCCS CONCERNED: ZJX ZTL ZME ZKC  
ZMP ARU ADDITIONAL INFORMATION:  
MARSA ALL MAPLE FLAG DPLY ACFT  
ENTIRE MISSION. ALL ACFT MNPS  
CERTIFIED.

IFPPF RTG FOR INSET34 FROM 4940N  
10315W REQ CLMB FL390 DRCT  
FIX.. FIX.. FIX.. FIX

b. Stationary ALTRV which includes aircraft:

ALTRV APREQ BUSY OBSERVER FERTILE  
SPADE 97-2/7

A. RIMER15-16

B. 2HB52/A

C. KRME

D. STATIONARY RESERVATION SURFACE  
TO 160 WITHIN AN AREA BNDD BY 4000N  
6600W 4000N 6200W 3600N 6200W 3600N  
6600W FROM 012200 MAY 1997 TO 020200  
MAY 1997.

E. KRME

F. N/A

G. TAS: 430KTS CRUISE/320KTS LOW  
LEVEL

PROJECT OFFICER CAPT ROGER DSN  
555-5555/COMM 111- 555-5556

ADDITIONAL INFORMATION: MARSA ALL  
AMC AND ACC ACFT. NOPAR NEEDS  
BUSY OBSERVER AIRCRAFT WILL PAR-  
TICIPATE IN NORAD FERTILE SPADE  
97-2/7. NOTE ALTRV APVL VALID WHILE  
IN CONTROLLED AIRSPACE ONLY.  
ARTCC: ZBW, ZNY



c. Stationary ALTRV which does not include aircraft:

ALTRV APREQ KANOE 97-1/7

A. N/A

B. N/A

C. N/A

D. STATIONARY RESERVATION SURFACE  
TO FL180 WITHIN 100NM RADIUS OF 2030N  
16000W FROM 132200 JUN 1997 TO 132330  
JUN 1997

E. N/A

F. N/A

G. PROJECT OFFICER CAPT MILLER DSN  
555-5555/COMM 111-555-5556

## **Chapter 4. FAA/NORAD/PACAF PROCEDURES FOR CONTROL OF AIR DEFENSE AIRCRAFT**

### **Section 1. GENERAL**

#### **4-1-1. POLICY**

All FAA and air defense control facilities providing service to the military interceptor aircraft shall conduct operations in accordance with the policies and procedures in this chapter.

#### **4-1-2. PROVISION OF ATC SERVICES**

ATC facilities shall provide air traffic control services to air defense aircraft to preclude the exercise of air traffic control in the same airspace by

two independent agencies. Coordination shall be accomplished in accordance with FAA Order 7110.65 with the using agency prior to providing ATC services within Warning Areas.

#### **4-1-3. FAA AND MILITARY APPROVAL REQUIRED**

Required changes to these agreed upon procedures will be subject to approval by both Headquarters FAA and military before effecting the change.

## Section 2. ADDITIONAL REQUIREMENTS

### 4-2-1. WHEN NORAD/PACAF LEVELS OF OPERATION CHANGE

When the operating level of an air defense control facility (ADCF) changes as the result of equipment problems and the responsibility for air defense aircraft will be transferred to another facility (i.e., another ADCF, Military Radar Unit (MRU), or ARTCC/CERAP), the transferring unit will:

- a. Inform the receiving facility of approved ATC assigned airspace in use to ensure an orderly transition of responsibility.
- b. Provide the receiving facility with information concerning nonparticipating IFR traffic cleared by ATC to operate in the assigned airspace.
- c. Inform the appropriate ARTCC/CERAP of the operational status change and, as necessary, request the ARTCC/CERAP to assume responsibility for interceptor aircraft.
- d. Before changing levels of operation, ensure that pilots of aircraft under the authority of the transferring facility have received an appropriate ATC clearance or transfer of flight information has been accomplished with the receiving facility.

### 4-2-2. ALTITUDE INFORMATION

All altitude information shall be on the basis of a pilot report or validated Mode C whenever altitudes are to be used as a means of separation.

### 4-2-3. LETTERS OF AGREEMENT

Letters of agreement between Air Defense Sectors/Regions and ARTCC/CERAP's shall contain only those matters relating to local requirements, such as fixed ATC assigned airspace, common reference points, coded flight plans, flush procedures, reduced separation minima authorized for individual bases, etc. Procedures/policies contained in this part or other related documents will not be repeated.

### 4-2-4. AWACS/NORAD SPECIAL FLIGHTS

NORAD has a requirement to position AWACS aircraft at selected locations on a time-critical basis. To the extent possible, these flights will utilize routes that have been precoordinated with the impacted ATC facilities. The identification "AWACS/NORAD Special" will be included in the remarks section of the flight plan. Allowable ATC control actions to avoid delays are specified in FAA Order 7110.65.

## Section 3. DEFENSE EMERGENCIES

### 4-3-1. DUTY STATUS

a. To ensure the carrying out of commitments in connection with the defense of the United States, follow instructions set forth below upon the declaration of an Air Defense Emergency, Defense Emergency, or implementation of the Security Control of Air Traffic and Navigational Aids (SCATANA) Plan.

**NOTE-**

*The area manager will be advised immediately of any change of the alert condition by military command responsible. Authentication requirements and procedures for actual and test messages will be established by NORAD or the unified/specified command for his area of responsibility.*

b. Personnel shall continue to operate those facilities which are essential in support of the defense effort, dispersing for protection where

possible. Watch-standing personnel shall remain at their duty posts regardless of the condition of alert, environment permitting, or until it has been determined that the function of their facility is no longer essential.

c. The area manager shall dispatch watch-standing personnel who are not essential for positional staffing to the closest shelter when an attack is imminent or when radiological fallout is predicted to occur.

d. The area manager shall notify the air traffic manager and facility security officer immediately of any change of the alert condition.

e. Implement security measures within the facility.

f. Arrange for alternate means of communication, as required.

## Section 4. NUCLEAR DETONATION (NUDET) REPORTS

### 4-4-1. FORWARDING INFORMATION

Air traffic facilities shall forward information received on NUDET's by voice over interphone circuits as set forth below. Western Pacific and Alaskan Regions shall develop appropriate procedures to ensure dissemination of NUDET information to air traffic and air defense facilities within their geographic areas.

a. All approach control facilities, towers, and AFSS/FSS's shall forward information received or observed about nuclear detonations to the ARTCC/CERAP in whose area the facility is located.

b. Where communication is lost with the ARTCC/CERAP in whose area the aircraft is located, forward/relay the NUDET report to an adjacent ARTCC/CERAP.

c. ARTCC/CERAP's shall forward NUDET data and fallout predictions received from NORAD to the operating field facilities and adjacent ARTCC/CERAP where affected.

d. ARTCC/CERAP's shall forward NUDET/ RADIATION data to the NORAD Region/Sector nuclear, biological, chemical operations cell (NBCOC) in which they are located.

### 4-4-2. FORMAT

a. Reporting facilities shall use the following format in reporting NUDET data to an ARTCC/CERAP and from an ARTCC/CERAP to a NORAD Region/Sector. In the case of an exercise NUDET, include the word "EXERCISE" as the last item in the report and precede the message with the name of the exercise.

b. **CONTENT.** EXERCISE...(if applicable). Type of event: (NUCLEAR or RADIATION). Date/time of event: (271200Z). Location of attack LAT/LONG: (3944N/8156W). Type of burst and yield, if known. If unknown, use 1MT or radiation reading in centigrays per hour (cGy/H). For example: air, surface, subsurface, or 1000 cGy/H increasing, (AIR, 1MT). Remarks (any information deemed relevant to the event). EXERCISE...

#### EXAMPLE-

##### NUDET REPORT.-

EXERCISE GONE GOOSE, NUCLEAR, 30/1200Z, 3944N8156W, SURFACE 1MT, HAVE LOST COMMUNICATIONS WITH ALL UNITS IN AREA, EXERCISE

##### RADIATION REPORT.-

EXERCISE GONE GOOSE, RADIATION, 30/1200Z, 3944N8156W, 1000 cGy/H INCREASING, CONTAMINATION IS HEADING 270, EXERCISE

### 4-4-3. RETAINING DATA

ARTCC/CERAP's shall plot and retain NUDET and fallout data. All air traffic facilities will maintain current NUDET and fallout data for the information of operating personnel.

### 4-4-4. AVOIDANCE OF HAZARDOUS RADIATION AREAS

To protect air traffic from dangerous radiation, it is necessary to avoid, if possible, areas of radiation contamination since multiple exposures will accumulate to an incapacitating dosage.

### 4-4-5. GLASSEYE REPORTS

A GLASSEYE report is a visual airborne observation of nuclear detonation locations and damage assessment made by military and other government agency aircraft. All ATC facilities (FAA and military) with air/ground communications capability should be prepared to accept and relay reports.

a. Upon receipt of a GLASSEYE report, all ATC facilities shall forward the report to the appropriate ARTCC's who shall forward the report to the appropriate NORAD Region/Sector.

b. GLASSEYE reports will be received in the following format and shall be forwarded verbatim.

1. Item 1. Date/time (Z) of observation.
2. Item 2. Apparent ground-zero in latitude/longitude and place name if known.
3. Item 3. Damage (Radius in miles).
4. Item 4. Crater (yes, no, or unknown).
5. Item 5. Visual description.

## Section 5. AIR DEFENSE LIAISON OFFICERS (ADLO'S)

### 4-5-1. REGION CONFIGURATION CHART

Air Defense regions are depicted in FIG 4-5-1.

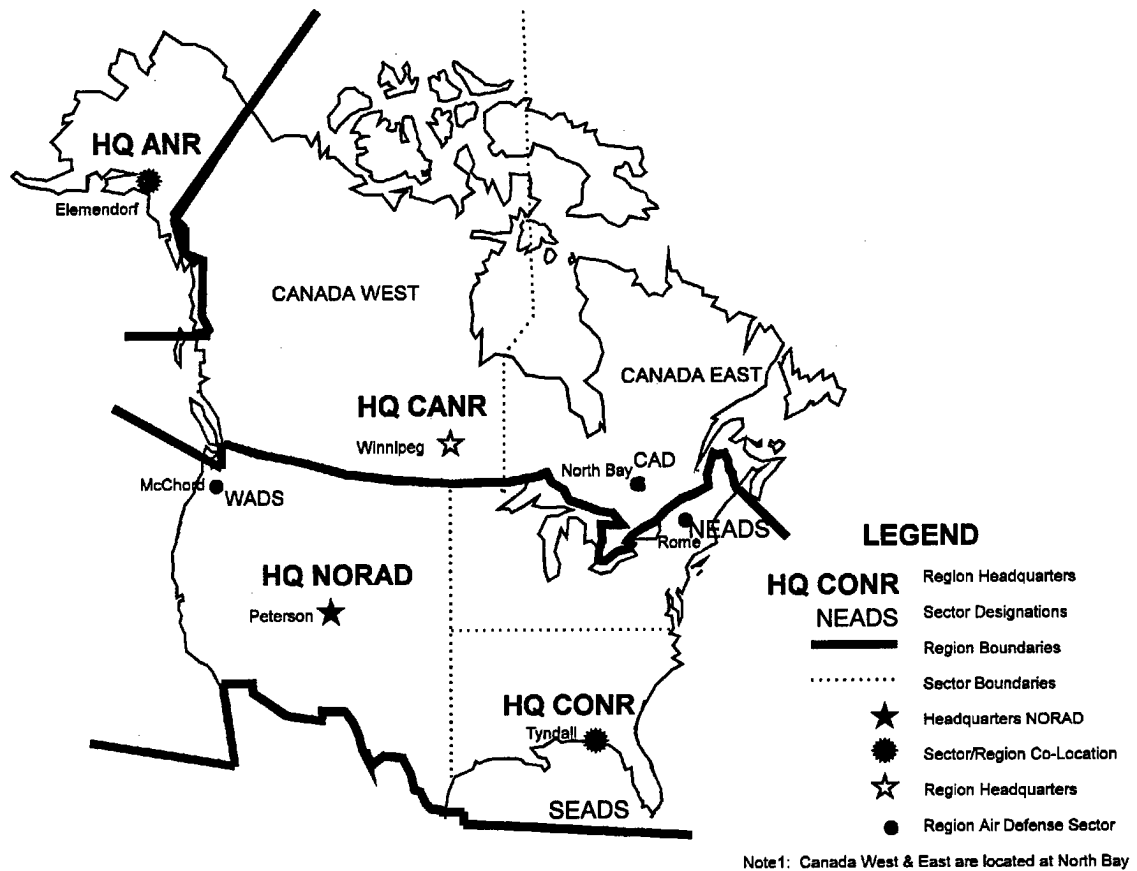


FIG 4-5-1

### 4-5-2. ASSIGNMENTS

ADLO's, under the supervision of the Military Operations Program Office, ATO-130, may be assigned to NORAD Headquarters and to each CONUS NORAD Region/Sector.

a. The ADLO will operate as a member of the NORAD commander's staff to which assigned.

b. NORAD Headquarters/NORAD Region/Sector, as appropriate, shall be officially notified prior to initial assignment or reassignment of an ADLO.

**NOTE-**

*Normally, one ADLO will be assigned.*

c. An ADLO may also provide assistance to other major military commands/services when so directed by ATO-130.

### 4-5-3. DUTIES WITH NORAD HEADQUARTERS OR NORAD REGION/SECTOR COMMANDER'S STAFF

As a member of the Commander's staff, the ADLO shall:

a. Advise the Commander and his staff on the capabilities and limitations of FAA facilities and personnel with respect to NORAD/Air Division facilities, and represent the FAA on matters pertaining to the utilization of FAA services and facilities for peacetime operations and during air defense emergencies.

b. During an air defense emergency, serve as a member of the commander's battle staff as liaison officer between the NORAD Headquarters to which assigned and the FAA.

c. Advise and assist appropriate members of the Commander's staff, as required, in the preparation of NORAD/Air Division plans and programs for SCATANA, Aircraft Movement Information Service (AMIS), all war plans, programs, operations orders, regulations, and operational procedures which involve participation of FAA personnel or use of FAA facilities.

d. Participate in the development of air defense exercises planned at NORAD Headquarters/Regions or Sectors, including assistance in coordination with FAA facilities for the assignment of airspace to accommodate the exercise.

e. Prepare detailed instructions for the guidance of ARTCC/CERAP's for:

1. Forwarding AMIS data to Air Defense facilities as required.

2. The application of plans for SCATANA, both during peacetime and during an air defense emergency.

f. Facilitate required liaison between NORAD Headquarters/NORAD Regions/Sectors, FAA headquarters, regions, and ATC facilities, as appropriate, to aid in negotiating Memorandums of Understanding, Letters of Agreement and changes thereto, and resolving common problems between FAA and NORAD facilities pertaining to the movement of interceptors and application of the authorization for interceptor operations (AFIO).

g. Review the communications capability of the NORAD Sector to ensure that adequate voice page hot-line interphone circuits are available to permit rapid exchange of information between NORAD and FAA controllers. Coordinate with FAA offices on new communications requirements in accordance with FAA/NORAD/1st AF policies.

#### **4-5-4. ADDITIONAL ADLO DUTIES WITH NORAD SECTORS**

In cooperation with the commander's staff, the ADLO shall:

- a. Provide indoctrination and periodic follow-on briefings to assigned personnel concerning the interceptor and strike/target aircraft in the FAA ATC system, the related procedures including the FAA AFIO, the impact of air defense activities on the ATC system, and the attendant functions and responsibilities of both Air Defense and ATC facilities.

- b. Determine the adequacy of the required equipment and proficiency of personnel authorized to control military aircraft in the ATC system or exercise the AFIO.

- c. Assist in the design, development, and administration of training programs to qualify Air Defense Control Facility (ADCF) personnel in selected air traffic control procedures/practices necessary to efficiently interact with the air traffic control system.

- d. Assist in correcting noted deficiencies in the application of FAA standards, policies, and procedures and in resolving real-time problems with ARTCC's as they occur.

- e. Recommend action to correct equipment deficiencies, unsafe handling of aircraft, or deficiencies related to FAA delegated responsibilities or authority.

- f. Assist the Faker Coordinator, the Faker monitor team, and the operations crew weapons teams in resolving problems occurring with ATC facilities during exercises.

- g. Be present at, or return to, the ROCC/SOCC during increased air defense readiness conditions or as exercise conditions dictate.

- h. Assist in the planning and development of air defense exercises and participate in the critique.

**4-5-5. ACCESS TO ADCF**

Access to an ADCF by FAA personnel shall be coordinated with the ADLO in advance. Any comments or recommendations of an operational nature that would result in changes to agreements shall be coordinated with ADLO.

**4-5-6. CONVENE PERIODIC MEETINGS**

Periodic meetings with air defense personnel shall be convened at both regional and field level to ensure recognition of changing military requirements and adequacy of ATC service.



## **Section 6. INTERCEPTOR OPERATIONS**

### **4-6-1. DIVERSION TO ALTERNATE BASE**

Upon receipt of information that interceptor aircraft will be diverted to an alternate base or will recover at other than the departure base, ADCF's shall forward pertinent information as soon as possible to the concerned ARTCC/CERAP or terminal facility for traffic planning purposes.

### **4-6-2. FAA RESPONSIBILITY**

FAA ATC facilities providing radar advisory service to VFR aircraft shall alert them of the interceptor training activity in progress. The ATC facility shall advise the military facility if the pilot indicates that he/she will penetrate the ATC assigned airspace and transfer flight information, to the military controller and continue to provide radar advisory services if workload conditions permit.

## Section 7. CONTROL INSTRUCTIONS

### 4-7-1. CONTROL BY CANADIAN NORAD FACILITIES

Interceptors may be controlled over U.S. territory by Canadian NORAD facilities provided the operation is conducted within ATC assigned airspace. The AFIO cannot be applied by Canadian NORAD.

#### NOTE-

*It is recognized that certain Canadian NORAD facilities must have access to U.S. airspace as these facilities are an integral part of the defense posture for the North American Continent.*

### 4-7-2. AGREEMENT BETWEEN FAA AND MILITARY

Agreements should be established between FAA regions/ARTCC's and appropriate military counterparts to ensure that the Canadian NORAD facilities can perform their mission.

### 4-7-3. TRANSFER CONTROL AT REQUEST OF ADCF

Interceptor aircraft shall be retained under ATC control as long as possible. ATC personnel shall not initiate action to transfer control to the ADCF except at the request of the ADCF or at a point previously established beyond which control by the ATC facility is no longer feasible. The control transfer point will normally be determined by the ADCF; however, ADCF personnel shall not request control jurisdiction of an interceptor aircraft until it reaches the point where control must be assumed to effect the air defense mission.

### 4-7-4. RELEASE OF AIRCRAFT TO THE ADCF

When an aircraft is not within FAA radar coverage but is under ATC jurisdiction, the aircraft may be released from the ATC frequency to the ADCF for traffic advisories. However, during this time, the ADCF shall not change the ATC clearance without ATC approval.

### 4-7-5. TIME OF TRANSFER OF CONTROL

Transfer of responsibility between ATC and ADCF shall be made at a time, fix, or altitude and only after elimination of any potential conflict with other aircraft under the jurisdiction of the transferring facility.

### 4-7-6. CONTROL JURISDICTION OF INTERCEPTOR AIRCRAFT

ATC facilities assume control jurisdiction of interceptor aircraft for return-to-base and recovery immediately after completion of the interceptor phase of the mission and when clear of all other aircraft under the control of the ADCF.

### 4-7-7. ACTIVE SCRAMBLES

Provide maximum assistance to expedite the movement of interceptors on active air defense missions until the unknown aircraft is identified.

a. The ADCF initiating the scramble shall identify the mission as an active air defense mission.

b. ATC services shall be used for active air defense missions insofar as the circumstances permit.

c. Upon request, ATC facilities shall expedite transfer of responsibility of the interceptor to the requesting ADCF.

### 4-7-8. INTERCEPTOR OPERATIONS BEYOND U.S. TERRITORIAL LIMIT

When interceptor and supporting aircraft; i.e., Long Range Defense Team (LRDT), are operating in CONTROLLED AIRSPACE beyond the territorial limit of the United States, ATC facilities shall apply standard ATC procedures. However, under certain conditions, air defense missions do not lend themselves to established ATC procedures. In those cases where ATC clearance is not issued, the operation will be conducted under the "due regard" concept contained in DOD FLIP for operating over the high seas.

a. Prior to authorizing "due regard" operations, the appropriate ADCF shall coordinate with the applicable ATC facility to obtain clearance and/or restrictions required for ATC separation of these aircraft from known IFR air traffic. If operation within the ATC system will derogate the mission, the ADCF shall inform the ATC facility concerned that operations will continue under "due regard." This statement means that the ADCF is assuming responsibility for providing separation between the aircraft for which "due regard" is declared and all observed traffic. When aircraft are outside radar coverage of the ADCF, separation becomes the responsibility of the aircraft commander.

**NOTE-**

*An ATC clearance may be available for some of the mission aircraft, but not available for others.*

b. Aircraft operating under the "due regard" concept are subject to one or more of the following conditions:

1. Aircraft shall be operated in visual meteorological conditions; or

2. Aircraft shall be operated within surveillance and radio communications of a radar facility; or

3. Aircraft shall be equipped with airborne radar that is sufficient to provide separation between themselves, aircraft they may be controlling, and other aircraft; or

4. Aircraft shall be operated outside controlled airspace.

#### **4-7-9. SCRAMBLE AIRPORT LISTING**

Air Defense Regions/Sectors shall provide the appropriate air ADLO/FAA region with the current listing of all airports from which active defense scrambles are authorized. Changes, additions, and/or deletions shall be provided as they occur.

#### **4-7-10. ADC AIR DIVISIONS/FAA REGIONS COORDINATION**

Headquarters, NORAD, will keep FAA regions currently informed of the augmentation forces/bases of other Commands/Services which may be employed. Changes, additions, and/or deletions, to include contingency operations, shall be provided.

#### **4-7-11. ALERT FORCE EVALUATION (AFE)**

The alert force evaluation is designed to test the response of the air defense alert force to a scramble order against a simulated unknown aircraft penetrating U.S. airspace. The alert force evaluation shall be coordinated with the appropriate air traffic control facilities. AFIO will not be invoked (see paragraph 4-12-3). Military authority assumes responsibility for separation of aircraft (MARSA) applies between participating aircraft.

## **Section 8. FLUSH/DISPERSAL OPERATIONS**

### **4-8-1. NORAD/PIAD FLUSH/DISPERSAL REQUIREMENTS**

NORAD has a requirement to flush/disperse interceptor and E-3 aircraft to initiate early attack against a hostile force, to enhance their survival, and to provide sufficient testing of the flush operations. To assure optimum reaction effectiveness of air defense units, these tests may be conducted in conjunction with exercise or evaluations during IFR or VFR conditions and may be scheduled by the NORAD Commander or his designated representative.

### **4-8-2. CONDUCT OF OPERATIONS**

ADCF's and ATC facilities providing flush and/or dispersal service to interceptor/E-3 and aircraft of the NORAD force shall conduct these operations in accordance with an air traffic control clearance.

### **4-8-3. LETTER OF AGREEMENT**

Flush/dispersal procedures shall be set forth in a letter of agreement.

### **4-8-4. PRIOR NOTIFICATION**

The military agency ordering a flush/dispersal operation shall notify the ARTCC/CERAP and appropriate terminal facility at least 1 hour in advance of the exercise or in accordance with the time specified in the letter of agreement. ATC facilities shall not inform interceptor squadrons or air defense sector personnel of this prior notification.

### **4-8-5. "EXERCISE FLUSH"**

The phraseology for testing flush operations is "Exercise Flush."

### **4-8-6. "FLUSH"**

The phraseology for actual flush operations is "FLUSH."

## Section 9. AIR DEFENSE AIRCRAFT EMERGENCY PROCEDURES

### 4-9-1. ARTCC/CERAP CONTROL OF AIR DEFENSE AIRCRAFT

If a known Air Defense aircraft under the control of an ARTCC/CERAP is believed to be in an emergency situation, or that an emergency situation is imminent, the ARTCC/CERAP shall apply the following procedures in addition to those contained in FAA Order 7110.65:

- a. Notify the appropriate ADCF of the nature of the emergency and position of the aircraft. Keep the ADCF advised of the progress of the emergency, request ADCF assistance, if required, and advise the ADCF upon termination of emergency.
- b. Immediately alert the direction-finding net.
- c. Notify the ATC facility at the intended recovery base of the nature of the emergency, the intended recovery operation, and request that radar navigational assistance be provided until the aircraft has the runway in sight or landing is assured.
- d. If radar contact is lost and radar identification cannot be reestablished, consistent with the nature of the emergency, immediate consideration should be given to the following:
  1. Advise the appropriate ADCF and request assistance. The ADCF will monitor and provide assistance as requested. While an aircraft is under the control of an ARTCC/CERAP, the ADCF responsible for monitoring the progress of an emergency will serve as a "focal point" for the exchange of information with the ARTCC/CERAP.
  2. Provide air traffic control clearances or instructions to the aircraft through an ADCF or other facility having radar and radio contact with the aircraft. Assign airspace to the ADCF, if practicable, to facilitate handling of the aircraft.
  3. Use of 243.0 MHz for the purpose of direction finding or possible assistance by other radar facilities.
  4. Order termination of ECM/chaff activities if appropriate.

### 4-9-2. ADCF CONTROL OF AIR DEFENSE AIRCRAFT

If an aircraft under the control of an ADCF is believed to be in an emergency situation, or that an emergency situation is imminent, the following procedures shall apply:

- a. The ADCF shall notify the appropriate ARTCC/CERAP and other concerned ADCF's of the emergency, keep them informed of the progress of the emergency, including aircraft position and pilot/ADCF intentions, and request assistance as necessary.
- b. Immediately alert the direction-finding net, when appropriate, through the appropriate ARTCC/CERAP.
- c. The ARTCC/CERAP and other concerned ADCF's shall monitor and provide assistance as requested.
- d. The ADCF responsible for the control of the aircraft shall serve as "focal point" for the exchange of information with the ARTCC/CERAP.
- e. If appropriate, notify the ATC facility at the intended recovery base giving the nature of the emergency and intended recovery operation.
- f. If radar contact is lost and radar identification cannot be reestablished, consistent with the nature of the emergency, immediate consideration should be given to the following:
  1. Advise the appropriate ARTCC/CERAP/ADCF and request assistance.
  2. Relinquish control of the aircraft as soon as practicable to the Air Traffic control facility having radar and radio contact.
  3. Use 243.0 MHz for purposes of direction finding or possible assistance by other radar facilities.
  4. Order termination of ECM/chaff activities if appropriate.

### 4-9-3. USE OF TERM "EMERGENCY CALL"

To ensure prompt response to a voice page hot line transmission concerning an emergency, preface the call-up with "Emergency Call."

## **Section 10. FLIGHT PLANS**

### **4-10-1. PREFILED AND ABBREVIATED FLIGHT PLANS**

Flight plans prefiled with ATC facilities shall be used for such operations as planned tactical deployments, tests of turnaround bases, and flush requirements. If unplanned deployments become necessary for exercise purposes, maximum coordination shall be effected with ATC facilities to obtain departure times consistent with the urgency of the mission.

### **4-10-2. DAILY TRAINING MISSIONS**

For daily training missions, abbreviated flight plans may be filed with ATC facilities for interceptor and strike aircraft operating to or from the airspace in which the training is to be conducted. Abbreviated flight plans must contain information deemed essential to both FAA and Defense Command agencies at the local level.

## Section 11. SCRAMBLE/AIRBORNE ORDERS

### 4-11-1. SCRAMBLE ORDERS

Air Defense Control Facilities (ADCF) shall immediately notify the appropriate terminal air traffic control facilities as specified in a letter of agreement when a scramble is ordered and accomplish the following actions:

a. Active air defense missions shall be so identified.

b. A flight plan containing the following information shall be filed:

1. Flight call sign.

2. Number and type of aircraft/equipment suffix.

3. Departure point.

4. Proposed departure time or the word "immediate."

5. Heading.

6. Altitude.

7. Duration of flight.

8. Remarks-Frequency, type of climb, ADCF, desired transfer point.

9. Any other information required by ATC facilities.

c. Facilities, both FAA and military, receiving these flight plans from an ADCF shall ensure that the necessary information is relayed to other affected terminal facilities and to the air route traffic control center (ARTCC) if ARTCC procedures are involved.

### 4-11-2. INFORMATION FURNISHED TO ATC FACILITY

The Air Defense Control Facility (ADCF) shall furnish the following information to the appropriate ATC facility at least 5 minutes prior to the time return-to-base will begin.

a. Call sign and type of aircraft/equipment suffix.

b. Number of aircraft.

c. Distance and bearing in relation to or estimated time over a common reference point.

d. Transfer altitude and destination.

e. Route of flight.

f. Special handling requirements, such as fuel, etc.

### 4-11-3. AIRBORNE ORDERS

The ADCF shall file airborne orders with en route and/or terminal facilities, as appropriate, as early as possible. Flight plan information shall include the following:

a. Call Sign.

b. Number and type of aircraft/equipment suffix.

c. Departure point.

d. Proposed departure time.

e. Heading.

f. Altitude.

g. Route of flight including.

1. Departure route.

2. Route to a fix serving the operating area (ATC assigned airspace/warning area).

3. Route from a predetermined fix to destination.

4. Frequency.

5. MARSAs when applicable.

6. Aircraft with whom MARSAs applies.

#### NOTE-

*Coded routes may be filed substituting the appropriate code number for items c, f, and the applicable sub-elements of item g in this paragraph.*

## **Section 12. FAA AUTHORIZATION FOR INTERCEPTOR OPERATIONS (AFIO)**

### **4-12-1. AUTHORIZATION FOR INTERCEPTOR OPERATIONS**

The FAA AFIO, as published in Appendix 16 of this Order, provides for the conduct of active air defense missions in the interest of the national defense when such missions cannot be conducted within the ATC system. ADCF's which are authorized to operate under the provisions of the AFIO are identified in Supplement 1 to the AFIO. (See Appendix 16.)

### **4-12-2. CHANGING MILITARY OR ATC REQUIREMENTS**

Changing military or ATC requirements and capabilities noted by ATC or NORAD personnel which would require notification, revision, or cancellation of the AFIO shall be brought to the attention of the military representative to the FAA region and Air Traffic Operations, ATO-1.

### **4-12-3. AUTHORIZATION AND USE OF AFIO**

The AFIO is applicable only to those aircraft engaged solely for the purpose of performing an active air defense mission. AFIO shall not be used to intercept alert force evaluation aircraft. The military headquarters initiating the alert force evaluation will monitor the ADCF response to ensure that the Senior Director does not invoke the AFIO.

### **4-12-4. AFIO SUSPENSION**

The Air Defense Liaison Officer (ADLO) may recommend suspension of the AFIO to ATO-1.

a. This action shall be taken only when an unsafe condition or practice is not or cannot be corrected and prompt action is not taken by the military.

b. Paragraph 1 of the AFIO prescribes the level of notification of suspension. Where safety of flight is concerned, suspension may occur prior to notification.

c. Headquarters FAA shall set forth local procedures to be followed as a result of the ADLO recommendation for AFIO suspension. These procedures do not require military approval but

should be coordinated with the NORAD Region/Sector concerned to ensure mutual understanding.

### **4-12-5. INFORMATION PROVIDED TO AIR TRAFFIC CONTROL**

ADCF shall provide the following to ATC facilities:

a. Immediately inform the ARTCC/CERAP's, and when appropriate, terminal area facilities, when control of interceptor aircraft will be conducted in accordance with the terms of the AFIO including the time and area in which the operation under the AFIO will take place.

b. Inform appropriate ATC facilities when the operation under the AFIO has been completed.

c. Inform ARTCC/CERAP personnel of the ADCF controlling interceptor aircraft.

d. Provide information concerning aircraft operating in Class A airspace under ADCF jurisdiction with transponders which are not functioning.

e. When requested by the FAA, a report will be submitted explaining the necessity for invoking the AFIO.

### **4-12-6. REQUEST FOR VERTICAL SEPARATION**

When an ADCF initiates a request for a clearance for vertical rather than lateral separation for an aircraft operating under the AFIO, ATC shall do one of the following:

a. Issue a clearance which includes the altitude, route, and effective times of the clearance.

b. Inform the ADCF if a clearance cannot be issued.

### **4-12-7. USE OF MODE 3/A CODE 7777 UNDER AFIO**

When interceptor operations are to be conducted under the terms of the AFIO, the controlling ADCF shall so advise interceptor pilots and instruct them to adjust transponders to reply on Mode 3/A Code 7777.



**4-12-8. MONITOR CODE 7777 WHEN THE AFIO IS EMPLOYED**

For the purpose of facilitating identification, transfers, and providing traffic information to intercept directors to the extent possible, ATC facilities are encouraged to monitor Mode 3/A Code 7777 whenever the AFIO is being employed.

**4-12-9. INFORMATION PROVIDED THE ADCF**

ATC facilities shall, to the extent possible, provide to ADCF the following:

- a. Traffic information on other known aircraft which will operate in proximity to intercept activities being conducted under the provisions of the AFIO.
- b. Inform the ADCF before clearing nonparticipating aircraft through ALTRV's provided for other aircraft.
- c. When requested, provide information on known traffic. Every effort shall be made to avoid disclosing the mission and extended route of NOPAR flights.
- d. Provide information concerning known flights operating in Class A airspace without transponders.
- e. Anticipated delays, restrictions, etc., pertinent to a mission.

## **Chapter 5. AIRCRAFT MOVEMENT INFORMATION SERVICE (AMIS)**

### **Section 1. SCOPE**

#### **5-1-1. PURPOSE**

This chapter establishes standard operating requirements, responsibilities, procedures, and methods for personnel engaged in providing AMIS.

#### **5-1-2. APPLICABILITY**

Procedures defined herein are applicable to all facilities providing AMIS. In areas not under the jurisdiction of Commander in Chief, North American Aerospace Defense Command (CINCNOAD), the Commander in Chief of the appropriate military command shall be substituted for CINCNOAD; e.g., the Commander in Chief, Pacific Air Forces (CINCPAC). Substitute the designated subordinate command for NORAD, as appropriate, where such reference appears in this chapter.

#### **5-1-3. NATIONAL REQUIREMENTS**

AMIS requirements which have national application are to be submitted by Headquarters NORAD,

through Headquarters Air Force Flight Standards Agency (AFFSA), to the Headquarters FAA, ATO-1, in sufficient time so that agreement concerning these requirements can be determined at least 90 days before the proposed implementation date. Upon determining the FAA's capability to satisfy these requirements, procedures necessary to meet these requirements will be published in this order. AMIS requirements of an emergency nature may be forwarded to the FAA later than the provisions set forth below.

#### **5-1-4. LOCAL REQUIREMENTS**

Submit AMIS requirements which do not have national application to the appropriate FAA regional division manager through the Air Defense Liaison Officer (ADLO). (See paragraph 5-2-2.)

## Section 2. REGIONAL OFFICE/AIR DEFENSE LIAISON OFFICER (ADLO) RESPONSIBILITIES

### 5-2-1. DEVELOPMENT

The development of supplements shall be dictated by existing local conditions such as equipment, personnel, facilities, communications, and economic considerations as well as specific details of the requirements for AMIS.

### 5-2-2. COORDINATION WITH ADLO

FAA regional offices, in conjunction with the appropriate ADLO, shall be responsible for coordinating, developing, and revising AMIS supplements with other FAA regional offices and/or NORAD/PIAD Regions/Sectors, as appropriate, to define AMIS procedures which are not national in scope or contained in this order.

### 5-2-3. COORDINATING WITH MILITARY AUTHORITY

In areas where ADLO's are not assigned, regional offices shall be responsible, in conjunction with the appropriate military authority, for preparation of supplements.

### 5-2-4. SIGNATURE

Supplements shall be signed by the appropriate FAA Air Traffic division manager and NORAD/PIAD Region/Sector Commander or their designated representatives.

### 5-2-5. CONTENT

Supplements shall include at least the following:

a. Correlation areas for levels of operation situations and the corresponding correlation line/fix with respect to which aircraft movement information shall be forwarded to the NORAD/PIAD air defense facilities.

b. NORAD/PIAD air defense facilities to which aircraft movement information is to be routed by the ARTCC/CERAP.

#### NOTE-

*The USAF provides to the FAA ADLO certain current listings of air defense facilities for which AMIS is required.*

c. Appropriate correlation lines/fixes for NORAD special interest flights.

d. Exceptions authorized in 14 CFR part 99.

### 5-2-6. DISTRIBUTION

a. Distribute supplements to the following:

1. FAA facilities as appropriate.

2. NORAD/PIAD Region/Sector air defense facilities, as required, by the appropriate ADLO.

b. In addition, forward copies of supplements as follows:

1. One copy-

Air Traffic Operations ATO-1

FAA Headquarters

800 Independence Avenue, S.W.

Washington, D.C. 20591

2. One copy-

NORAD/PIAD Region Commander concerned.

3. One copy-

FAA ADLO

Headquarters NORAD

Peterson AFB, CO 80914-5001.

4. One Copy-

HQ NORAD/J30G

Peterson AFB, CO 80914-5002

### 5-2-7. STAFFING AMIS POSITIONS

FAA regional offices should study the AMIS program on a continuing basis to determine the need for an increase or decrease in staffing AMIS positions of operation in facilities providing this service. When defense requirements dictate a change in staffing, forward this request to FAA Headquarters, ATO-1, for consideration.

#### NOTE-

*Normally, AMIS operations contained in supplements are not considered justification for an increase in staffing.*

## **Section 3. TOWER/RAPCON/RATCF/FACSFAC/FSS RESPONSIBILITIES**

### **5-3-1. FORWARDING INFORMATION**

Personnel in towers, radar approach control facilities associated with the U.S. Air Force (RAPCON's), radar air traffic control facilities associated with the U.S. Navy (RATCF's), fleet area control and surveillance facilities (FACSFAC's), and automated flight service stations/flight service stations (AFSS/FSS's) shall forward specific information dealing with flight plans, position reports, penetration reports, departure times, and other information on aircraft that propose to operate or are operating within the

ADIZ to the appropriate ARTCC/CERAP that provide AMIS.

### **5-3-2. SECURITY CONTROL OF AIR TRAFFIC**

a. The procedures herein relating to security control of air traffic are in addition to and do not alter those set forth elsewhere for the normal handling of IFR and VFR movement and control data.

b. Personnel shall be familiar with these procedures, 14 CFR 99, and other documents relating to the security control of air traffic issued by the ARTCC/CERAP concerned.

## Section 4. ARTCC RESPONSIBILITIES

### 5-4-1. SECURITY CONTROL OF AIR TRAFFIC

Personnel shall be familiar with the provisions set forth herein, 14 CFR part 99, and other documents relating to the security control of air traffic.

### 5-4-2. EXCEPTIONS TO FURNISHING AMIS

ARTCC/CERAP's shall furnish AMIS on all known aircraft which operate in an ADIZ on a track towards the United States, regardless of the point of departure, except when:

a. Aircraft are operating at a true airspeed of less than 180 KTS in the Hawaii ADIZ or over any island, or within 3 NM of the coastline of any island, in the Hawaii ADIZ; or

b. Aircraft are operating at a true airspeed of less than 180 KTS in the Alaska ADIZ while the pilot maintains a continuous listening watch on the appropriate frequency; or

c. Aircraft are operating at a true airspeed of less than 180 KTS in the Guam ADIZ; or

d. Alternate procedures are agreed to by the FAA and military commanders concerned.

#### NOTE-

*AMIS shall be furnished on aircraft penetrating within the Southern Border Domestic ADIZ and western portion of the Gulf of Mexico Coastal ADIZ per mutual agreement between the FAA Southwest Region and the Southeast and the Western Air Defense Sectors, respectively.*

### 5-4-3. SPECIAL INTEREST FLIGHTS

a. ARTCC/CERAP's shall furnish AMIS on NORAD Special Interest flights, regardless of the direction of flight or whether the flight is conducted within an ADIZ.

b. ARTCC/CERAP's shall transmit AMIS on aircraft as set forth in supplements.

### 5-4-4. FACILITY DIRECTIVES

ARTCC/CERAP's shall develop facility directives prescribing detailed internal procedures necessary for the expeditious and efficient transmission of

applicable aircraft movement information to NORAD/PIAD air defense facilities. Facility directives shall include at least the following:

a. Methods to be used in acquiring, processing, and disseminating the appropriate IFR and DVFR aircraft movement information to NORAD/PIAD air defense facilities.

b. Methods to be used in determining, from available flight plans and flight progress strips:

1. The penetration point and the estimated time over the penetration point of the appropriate correlation line or fix.

2. The predetermined reporting point and the estimated time over such a point.

3. Revisions to any of the foregoing.

### 5-4-5. MONITOR/ANALYZE AMIS

ARTCC/CERAP's shall monitor the AMIS program, analyze all AMIS errors and system inadequacies, and assure that the responsibilities of the FAA are being met to the maximum of system capability.

### 5-4-6. AMIS UNKNOWN/INTERCEPT LOGS

ARTCC/CERAP's shall be responsible for producing their supply of AMIS Unknown/Intercept Logs and the ROCC/SOCC data communication message format.

### 5-4-7. EMERGENCY AMIS

Upon the declaration of an Air Defense Emergency or Defense Emergency or the implementing of any of the provisions contained in the SCATANA plan by CINCNORAD or the NORAD/PIAD Region/Sector Commander, ARTCC/CERAP's shall modify AMIS to the degree necessary to conform to specific instructions received from the NORAD/PIAD Region/Sector Commander. In the absence of any modifying instructions, continue to provide AMIS in accordance with procedures in effect before the development of the emergency condition.

## Section 5. INSTRUMENT FLIGHT RULES (IFR)/DEFENSE VISUAL FLIGHT RULES (DVFR) ADIZ FLIGHT PLANS

### 5-5-1. AMIS WITHIN AN ADIZ-IFR

In addition to the normal handling of aircraft operating in accordance with IFR, ADIZ penetration information or position reports on IFR operations outside of CONTROLLED AIRSPACE shall be forwarded immediately to the appropriate ARTCC/CERAP.

### 5-5-2. AMIS WITHIN AN ADIZ-DVFR

For security control of air traffic, specific information contained in flight plans filed by a pilot operating or proposing to operate in accordance with DVFR within an ADIZ shall be forwarded to the appropriate ARTCC/CERAP.

#### NOTE-

*Other offices, military and civil, which have direct communications with the appropriate ARTCC/CERAP are permitted to forward DVFR flight plan data directly to the ARTCC/CERAP. When pilots require normal handling of VFR flight plans, these offices are permitted to file a VFR flight plan with the FSS and a DVFR flight plan with the ARTCC/CERAP.*

### 5-5-3. FORWARDING DVFR INFORMATION

Forward DVFR flight plan information to the appropriate ARTCC/CERAP by Service F interphone or NADIN data communication circuit as follows:

- a. Aircraft call sign.
- b. Number of aircraft.
- c. Type of aircraft.
- d. DVFR discrete transponder code, if assigned.
- e. Altitude (within ADIZ).
- f. True airspeed.
- g. Time of departure.

1. When the flight plan information is provided before the aircraft's departure, forward the proposed departure time.

2. Forward the actual departure time immediately upon receipt.

3. If arrangements cannot be made to obtain the actual departure time, forward the ETD.

- h. Point of departure.
- i. Route of flight.
- j. Destination.
- k. Remarks as appropriate.

1. The estimated time and point of penetration of the ADIZ.

2. If no arrival report (NORIV) will be filed with an appropriate aeronautical facility, include the abbreviation "NORIV."

#### NOTE-

*Arrival reports are not required for scheduled air carrier DVFR flights.*

3. DVFR position reports on all aircraft.
4. Revisions to position reports, revisions to time or place of penetration, and change in route of flight.
5. Other information deemed necessary for the security control of air traffic.

#### NOTE-

*Regardless of radar contact status, aircraft must be instructed to remain on the assigned DVFR code until the DVFR flight is no longer required.*

### 5-5-4. STOPOVER DVFR FLIGHT PLANS

Accept stopover DVFR flight plans filed on those aircraft planning one or more landings en route to the destination, provided the information in 5-5-3 is furnished for each segment of flight. Remind the pilot that 14 CFR part 99 requires departure times to be made good and that he/she should retain a written record of these times at each departure point.

### 5-5-5. ADDRESSING DVFR FLIGHT PLAN MESSAGES

Route and address DVFR flight plan information (see paragraph 5-5-3) to the ARTCC/CERAP in whose flight advisory area penetration of an ADIZ is intended unless special arrangements provide otherwise.

**a. Contiguous U.S. ADIZ:**

	<b>Service B Call</b>	<b>ARTCC Location</b>
Coinciding with the Los Angeles flight advisory area	ZLA	Los Angeles
Coinciding with the Albuquerque flight advisory area	ZAB	Albuquerque
Coinciding with the Houston flight advisory area	ZHU	Houston
East of the Boston flight advisory area	ZBW	Boston
East of the New York flight advisory area	ZNY	New York
East of the Washington flight advisory area	ZDC	Washington
East of the Jacksonville flight advisory area	ZJX	Jacksonville
East of the Miami flight advisory area	ZMA	Miami
West of the Los Angeles flight advisory area	ZOA	Oakland
West of the Oakland flight advisory area	ZOA	Oakland
North and west of the Seattle flight advisory area	ZOA	Oakland
Within or south of the Houston flight advisory area	ZHU	Houston
Within or south of Miami flight advisory area	ZMA	Miami
Within the Jacksonville flight advisory area	ZJX	Jacksonville

**b. Alaskan ADIZ:**

	<b>Service B Call</b>	<b>ARTCC Location</b>
Alaskan Domestic ADIZ	ANC	Anchorage

**c. Hawaiian ADIZ:**

	<b>Service B Call</b>	<b>ARTCC Location</b>
Forward all DVFR flight plan messages concerning flight in the Hawaiian ADIZ to the Honolulu CERAP.	HNL	Honolulu

**d. Canada-Routing DVFR Flight Plan Messages to Canada:**

Compose DVFR messages pertaining to aircraft operating on a DVFR flight into Canada in the same format as for DVFR messages in the U.S., addressed and routed to the appropriate trans-border, tie-in station.		
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## Section 6. INFORMATION DISSEMINATION

### 5-6-1. ADIZ INFORMATION

Aircraft movement information on aircraft penetrating the outer boundary of an ADIZ on a track towards the United States and on aircraft other than those specified in paragraph 5-7-1 operating within an ADIZ on a track toward the United States shall be forwarded to ROCC/SOCC facilities in accordance with the following:

a. Transmit aircraft movement messages by ROCC/SOCC data communication equipment.

b. Convert the flight plan to the ROCC/SOCC format (see Section 10 of this Chapter) and all correlation points to latitude and longitude coordinates.

c. Check aircraft movement messages converted to the ROCC/SOCC format for accuracy before transmitting.

d. If data communication equipment is not available:

1. Forward aircraft movement messages in the same sequence as the ROCC/SOCC data communication format and transmit by telephone to ADCF ID section except as provided in a supplement.

2. Aircraft movement information concerning flights on Federal airways may be forwarded based on radio fix estimates or reports when so specified in the appropriate supplement.

### 5-6-2. INITIAL AIRCRAFT MOVEMENT MESSAGES

AMIS controllers shall transmit initial aircraft movement messages to air defense facilities when one of the following conditions exists:

a. Aircraft will penetrate a domestic ADIZ at least 30 minutes but not more than 6 hours before the estimated time of penetration or crossing of a correlation fix/line as established in a local supplement.

b. Aircraft will penetrate a coastal ADIZ:

1. At least 20 minutes or as soon as practicable after receipt of flight plan but not more than 6 hours before estimated time of penetration or crossing of

a correlation fix/line as established in a local supplement.

2. When aircraft are operating on published oceanic routes:

(a) After the aircraft has reported crossing an established correlation fix specified in a supplement.

(b) At the time the aircraft was estimated to cross such a fix when a position report has not been received.

c. As soon as practicable when the point of aircraft departure does not permit compliance with the time limits specified above.

### 5-6-3. AIR DEFENSE FACILITY REQUEST FOR TRANSMISSION

ARTCC's will not be requested to re-transmit AMIS data previously forwarded to an Air Defense Control Facility (ADCF) due to ADCF expansion programs. The expanding ADCF will obtain an AMIS update from the "out of service" military radar facility.

### 5-6-4. NAVY FLIGHT PLANS

Transmit flight plans for certain Navy flights which do not describe the entire route of flight within the ADIZ to the air defense facility exactly as received.

#### NOTE-

① *FAA accepts no responsibility for checking the coding against classified data to ensure that the coded information is compatible with the uncoded portions of the flight plan.*

② *FAA accepts no responsibility for transmitting such information to the appropriate air defense facilities.*

### 5-6-5. SUPPLEMENTAL IDENTIFICATION DATA

All information from the ARTCC/ATC facility regarding identification of an "unknown" shall be passed directly to the ID Section of the ROCC/SOCC.



**5-6-6. INTERPHONE LINE CHECK**

At the close of each day, AMIS sector controllers shall call each ROCC/SOCC by interphone to conduct an interphone line check.

**5-6-7. TEST ROCC/SOCC MESSAGE**

AMIS sector controllers shall transmit a test ROCC/SOCC data communication message when requested by the ROCC/SOCC.

## Section 7. SPECIAL INTEREST REPORTING

### 5-7-1. CAT TRACK FLIGHTS

Provide AMIS direct to air defense facilities via voice circuits on all IFR aircraft classified as NORAD Special Interest flights, and on those flights specified in paragraph 5-9-4.

a. Departing or operating in the conterminous United States defense area.

b. Operating in an ADIZ providing the aircraft will not penetrate the outer boundary of the ADIZ and radar service procedures are in effect for the entire period of the operation.

c. To accommodate the above procedures, AMIS supplements shall include at least:

1. Air navigation aids, common reference points, or correlation lines to be displayed on NORAD radar scopes,

2. ARTCC sector boundaries and telephone numbers, and

3. Air defense facility areas of responsibility and telephone numbers.

#### NOTE-

*Where direct communications between FAA ARTCC/CERAP's and NORAD facilities are not available, CAT TRACK data will be forwarded via General Purpose Defense Switching Network (DSN).*

### 5-7-2. DEPARTURES WITHIN NORAD RADAR COVERAGE

AMIS data provided in accordance with paragraph 5-7-1 shall be forwarded as soon as practicable after departure on all aircraft which depart within an area of NORAD radar coverage by furnishing:

a. Where FAA radar coverage is available:

1. "CAT TRACK."

2. Position in relation to air navigation aids or common reference points depicted on FAA/NORAD radar scopes.

3. Heading.

4. Identification.

5. Number of aircraft.

6. Type of aircraft.

7. Altitude.

8. SCATANA wartime air traffic priority (when appropriate).

#### NOTE-

① *This information need not be provided immediately after departure when it will ease the work load by waiting until the aircraft is outside an area of traffic congestion.*

② *When providing radar position identification, avoid use of the term "Radar Hand-off."*

b. When FAA radar coverage is not available:

1. "CAT TRACK."

2. Last known position/estimate and next reporting position.

3. Identification.

4. Number of aircraft.

5. Type of aircraft.

6. Altitude.

7. SCATANA wartime air traffic priority (when appropriate).

### 5-7-3. DEPARTURES OUTSIDE NORAD RADAR COVERAGE

Provide identification, departure time, departure base, and ETE on all NORAD Special Interest flights which depart from airfields not having NORAD radar coverage and which will not penetrate areas of NORAD coverage. In addition, provide AMIS data in accordance with paragraph 5-7-2 on all flights which depart from airfields not having NORAD radar coverage and subsequently penetrate an area of NORAD radar coverage.

### 5-7-4. RADAR IDENTITY LOST

When radar identity is lost within the air defense system, reidentify, upon request, aircraft operations specified in paragraph 5-7-1 in accordance with paragraph 5-7-2 as appropriate. The air defense facility will furnish the aircraft call sign in lieu of the NORAD Special Interest code.

### 5-7-5. AMIS FOR OTHER SPECIFIC FLIGHTS

Provide AMIS in accordance with paragraph 5-7-2 a and b, as appropriate, only when requested by the air defense facility on other specific flights (which simulate aircraft airborne at the time a national emergency is declared) as agreed between the ARTCC/CERAP and the air defense facility.

#### NOTE-

*This procedure should be used frequently enough to develop an FAA/NORAD capability to identify all aircraft airborne at the beginning of an emergency condition. Air defense facilities will not ask for specific command aircraft; e.g., Tactical Air Command, but may ask for type of aircraft; e.g., fighter, bomber, B707. They may also ask for service aircraft; e.g., United States Air Force.*

### 5-7-6. WITHHOLDING AIRCRAFT MOVEMENT INFORMATION

Except as provided in subparagraph a, do not give aircraft movement information to any air defense radar facility when the abbreviation "NOPAR" is included in the flight plan. When "NOPAR" is followed by specified sites or areas, withhold this information only from those locations specified. The provisions of subparagraph a, do not apply when a NORAD Region/Sector is being evaluated and NORAD has precoordinates with the ADLO and the applicable ARTCC's to have aircraft movement information withheld on a specific flight.

a. Upon receipt of a specific request from the NORAD Region/Sector to pass aircraft movement information which has the abbreviation "NOPAR" in the flight plan, the ARTCC/CERAP controller shall acknowledge the request, immediately call back and ask for the Exercise Controller/Trusted Agent to confirm the request. Upon receipt of confirmation, such data shall be forwarded immediately to the air defense facility specified by

the Exercise Controller/Trusted Agent. Forwarding of such data shall continue for such time as the NORAD Region/Sector may indicate.

b. Upon a specific request from the ADLO, ARTCC/CERAP controllers shall forward to the requesting ADLO, aircraft movement information on aircraft even though the "NOPAR" abbreviation is included in the flight plan.

### 5-7-7. AIR DEFENSE EXERCISE FLIGHT PROGRESS STRIPS

When a flight plan is received from a military agency with the abbreviation "NOPAR" in the Remarks section of the flight plan, FAA air traffic control personnel shall insert an asterisk (\*) immediately preceding the aircraft identification or mission nickname; e.g., \*V1234, on all flight progress strips prepared for the aircraft/mission as appropriate. Except as provided in paragraph 5-7-6 a, FAA air traffic control personnel shall not forward any information to air defense radar facilities on flights having the abbreviation "NOPAR" in the flight plan or when an asterisk is inserted immediately preceding the identification of the aircraft/mission on the flight progress strip.

### 5-7-8. PRESIDENTIAL AIRCRAFT

AMIS shall be provided for aircraft transporting the President and the Vice President as set forth below:

a. Aircraft movement messages for aircraft transporting the President or the Vice President of the United States shall be transmitted by the AMIS controller to the appropriate NORAD air defense facilities along the route of flight.

b. Flight plans shall be transmitted in accordance with AMIS procedures.

c. Aircraft shall be identified in accordance with 7110.65.

## Section 8. VIOLATIONS OF ADIZ REGULATIONS (14 CFR PART 99)

### 5-8-1. UNKNOWN RADAR TRACK

AMIS controllers shall take the actions listed in paragraph 5-8-2 and paragraph 5-8-3 when a NORAD/PIADR air defense facility advises that an unknown radar track exists within the air defense system.

#### NOTE-

*The NORAD/PIADR air defense facility is expected to furnish information on the time, aircraft position coordinates, altitude, speed, heading, and possible identification relating to the unknown radar track.*

### 5-8-2. CHECK DATA AT HAND

AMIS controllers shall check flight progress strips and other sources of information for aircraft operating within the area in which the unknown is reported.

### 5-8-3. FORWARD KNOWN AIRCRAFT DATA TO NORAD

AMIS controllers shall forward to the NORAD air defense facility aircraft movement information available within the ARTCC/CERAP on aircraft operating within the area in which the unknown radar track is reported when such information is requested by the NORAD air defense facility.

#### NOTE-

*When the NORAD air defense facility is unable to correlate the unknown radar track with the additional information, an intercept can be ordered by the NORAD air defense facility to identify the aircraft. When an intercept is executed to identify the unknown radar track, the NORAD air defense facility is expected to furnish information on the time of intercept, aircraft position coordinates, altitude, speed, heading, and identification of the aircraft intercepted.*

### 5-8-4. DETERMINE CAUSE FOR UNKNOWN RADAR TRACK

When an unknown radar track has been reported or an intercept executed by the NORAD air defense facility to identify the unknown radar track, AMIS controllers shall determine the cause for the unknown radar track by analyzing the information

received from the NORAD air defense facility, flight progress strips, and other available information in the ARTCC/CERAP.

### 5-8-5. AIRCRAFT IDENTIFICATION BEFORE INTERCEPT

AMIS controllers shall complete Part A of the AMIS Unknown/Intercept Log (FIG 5-8-1) when an unknown radar track is reported by NORAD air defense facilities and the aircraft is identified before intercept. Each Unknown/Intercept Log shall be numbered consecutively for each calendar year.

#### NOTE-

*Report numbers associated with Unknown/Intercept Log unknown tracks are not to be confused with Form 8020-17, Preliminary Pilot Deviation Reports.*

### 5-8-6. AIRCRAFT IDENTIFICATION AFTER INTERCEPT

AMIS controllers shall complete Part B of the Unknown/Intercept Log when an unknown radar track was intercepted to identify the aircraft.

### 5-8-7. RETAIN DATA

AMIS controllers shall attach flight progress strips, flight plans, and other available data on the aircraft reported by the NORAD air defense facility as an unknown/intercept, as appropriate, to the AMIS Unknown/Intercept Log. This data shall be retained in the facility files for 3 months.

### 5-8-8. TIME ENTRY

For the purpose of closing out daily logs and other data, AMIS sectors shall end the day at 2359Z and begin the new day at 0000Z.

### 5-8-9. DEVIATION OF NORAD ADIZ TOLERANCES

When it appears that a deviation of NORAD ADIZ tolerances or a violation of 14 CFR part 99 has occurred, the ARTCC/CERAP and the ADCF shall immediately coordinate and investigate the irregularity to confirm that the allegation is valid.

**5-8-10. TELEPHONE NOTIFICATION BY ARTCC/CERAP**

Alleged deviations of NORAD ADIZ tolerances and alleged violations of 14 CFR part 99 shall be telephoned by the ARTCC/CERAP to the nearest appropriate Flight Standards Service field office (IFO or FSDO).

**NOTE-**

*NORAD ADIZ tolerances are described in Advisory Circular 99-1, Security Control of Air Traffic.*

**5-8-11. REVIEW OF DEVIATIONS BY ARTCC/CERAP AND ADCF**

ARTCC/CERAP's and ADCF's shall conduct a joint review of alleged deviations from NORAD ADIZ tolerances and alleged violations of 14 CFR part 99.

a. The ADCF shall send a written report to the ARTCC/CERAP on the alleged deviation/violation (except U.S. military aircraft) within 10 days after the irregularity occurs. ADCF shall take follow-up

action on U.S. military aircraft in accordance with established military procedures (Appropriate Air Force Instruction).

b. When an ARTCC/CERAP and ADCF joint review confirms an alleged deviation from NORAD ADIZ tolerances or an alleged violation of 14 CFR part 99, the ARTCC/CERAP shall prepare a Preliminary Pilot Deviation Report (FAA Form 8020-17).

c. The ARTCC/CERAP shall forward the completed Form 8020-17 together with a copy of the ADCF report to the appropriate FSDO, within 5 working days after receiving the report of the alleged deviation or violation from the appropriate ADCF. When the ARTCC/CERAP has no information on the incident, indicate this on the Incident Report and forward with ADCF report.

**NOTE-**

*The FSDO will advise in writing the appropriate Air Defense Sector with a copy to the ARTCC/CERAP of the completed action on these Incident Reports.*

### AMIS UNKNOWN/INTERCEPT LOG

Air Defense Division \_\_\_\_\_ Date \_\_\_\_\_ Report No. \_\_\_\_\_

**A. Unknown:**

1. Time \_\_\_\_\_ Z Coordinates \_\_\_\_\_ Altitude \_\_\_\_\_ No. Aircraft \_\_\_\_\_  
 Speed \_\_\_\_\_ Heading \_\_\_\_\_ Possible Identification \_\_\_\_\_  
 Remarks \_\_\_\_\_

2. Identified as \_\_\_\_\_ Time \_\_\_\_\_ Z Location \_\_\_\_\_  
 Identified by: (Circle appropriate) Late Flight Plan, Revision, Progress Report, Other  
 (Specify) \_\_\_\_\_

3. Reason Unknown: (Circle appropriate) Late Flight Plan, Error in Flight Plan, Late  
 progress report, Pilot error, Other (Specify) \_\_\_\_\_

4. No Flight Plan received by AMIS (explain) \_\_\_\_\_  
 \_\_\_\_\_

**B. Intercept:**

1. Location \_\_\_\_\_ Time \_\_\_\_\_ Z  
 The following information must be given to the NORAD air defense facility when AMIS  
 is forwarded late, there is erroneous aircraft movement information, or there is an  
 apparent violation of ADIZ requirements.

2. Activation Point \_\_\_\_\_ Time \_\_\_\_\_ Z

3. Time Flight Plan Transmitted \_\_\_\_\_ Z

4. Revision Point \_\_\_\_\_ Time \_\_\_\_\_ Z Time Trans. \_\_\_\_\_ Z

5. Time Progress Received by AMIS \_\_\_\_\_ Z Time Transmitted \_\_\_\_\_ Z

6. Flight Plan and Route \_\_\_\_\_  
 \_\_\_\_\_

7. Enter remarks by AMIS controller on back.  
 \_\_\_\_\_  
 \_\_\_\_\_

FIG 5-8-1

## Section 9. SPECIAL INTEREST FLIGHTS-CUBA

### 5-9-1. PROVIDE AMIS

ARTCC's located within the conterminous United States shall provide AMIS on Special Interest flights as set forth below:

a. Furnish information in accordance with paragraph 5-7-1 and paragraph 5-7-2 on known aircraft of Cuban registry, regardless of the point of origin or destination, and all other known aircraft en route to Cuba, except United States and Canadian military aircraft en route to and from Cuba. Correlation points on aircraft operating into or through the airspace overlying the conterminous United States from Canada shall be the point where the aircraft crosses the United States-Canadian boundary.

b. Furnish information on all known aircraft en route to or from Cuba, except for United States and Canadian military aircraft en route to and from Cuba, operating within the airspace overlying those portions of New York, Miami, Houston, and Oakland Oceanic Control Areas which lie outside the ADIZ's in accordance with the following:

1. Exceptions set forth in paragraph 5-4-2 do not apply.
2. Correlation points on aircraft operating in the oceanic control areas specified above shall be those set forth in supplements, as agreed upon between the FAA and the SOCC's.

### 5-9-2. NORAD SPECIAL INTEREST FLIGHTS

Information on aircraft specified in paragraph 5-9-4 b shall be transmitted as NORAD Special Interest flights, and the digits "000" shall be inserted in Step 19 of the ROCC/SOCC format.

### 5-9-3. INFORMATION FURNISHED

ARTCC's located within the conterminous United States shall furnish the information on aircraft operations as set forth in paragraph 5-9-1 as specified below:

a. The original point of departure or the last point of departure outside the conterminous United

States, if known, and the destination of the aircraft shall be included in Remarks.

b. Air traffic control-approved changes to the route of flight or destination as requested by the pilot.

c. Emergencies declared.

d. Additional information requested by an air defense facility (see paragraph 5-7-2 a).

### 5-9-4. MARKING FLIGHT PROGRESS STRIPS

To assist in locating and identifying flight progress strips on aircraft specified in paragraph 5-9-1, the following additional actions are required:

a. The aircraft identification shall be boxed-in with red pencil.

b. The facility transmitting the flight plan information shall inform the receiving facility that the flight is a "Special Interest Flight-Cuba."

c. The red box around the identification on the flight progress strip shall be check-marked when the flight plan information has been relayed to both of the following:

1. Between air traffic control facilities.
2. To the AMIS position of operation.

### 5-9-5. AMIS-CUBA

Air traffic control facilities, including those providing tower en route IFR service, located within the conterminous U.S. shall:

a. Provide the appropriate ARTCC with available information on aircraft operations specified in paragraph 5-9-1.

b. Provide the appropriate ARTCC with available information as set forth in paragraph 5-9-3.

c. Apply the requirements of paragraph 5-9-4 a, b, and c1.

#### NOTE-

See Order 7210.3 Chapter 18, Section 4, SPECIAL INTEREST FLIGHTS.

## Section 10. NORAD AIRCRAFT MOVEMENT MESSAGE FORMAT

### 5-10-1. NORAD AIRCRAFT MOVEMENT MESSAGES

Aircraft movement messages are divided into 23 steps and shall be transmitted in sequence. Except for Steps 1 and 23, each step is assigned a maximum number of spaces for insertion of characters, figures, or numbers. Information transmitted in the aircraft movement message preceding the activation symbol (-) and following the inactivation symbol (#) does not go into the NORAD computer; therefore, the type or number of characters is not limited.

#### Step 1-Address and message number:

a. Prefix all messages with the letter designator of the NORAD Region/Sector addresses for which the message is intended as indicated below:

Facility	Designator	Location
CONR (SE)	C	Tyndall AFB, FL
CONR (NE)	B	Griffiss AFB, NY
Cdn NR (CE)	S	North Bay, ONT
Cdn NR (CW)	W	North Bay, ONT
CONR (NW)	R	McChord AFB, WA

b. Step 1 may contain letters and digits in any sequence.

c. Number all messages sequentially in the order transmitted to each NORAD Region/Sector beginning at 0000Z and ending at 2359Z each day.

d. The same message may be transmitted simultaneously to more than one NORAD Region/Sector by adding address identifiers and message numbers.

**EXAMPLE-**  
*G15M10V12*

#### Step 2.-Activation Symbol (-):

a. Step 2 shall consist of one character.

b. Following Step 1, insert an activation symbol (-).

#### Step 3-Flight Plan Category:

a. Step 3 shall consist of one character.

b. All messages shall contain the letter "F," "B," or "S," as appropriate.

1. "F" signifies a point-to-point flight which may or may not involve a planned delay in the correlation area.

2. "B" signifies an ACC tactical flight and is designated in the remarks section of the flight plan by "PB" (Papa Bravo), followed by the contraction "PADRA."

**EXAMPLE-**  
*PB PADRA*

3. "S" signifies a NORAD Special Interest flight and is designated in the remarks section of the flight plan by "PS" (Papa Sierra), followed by the contraction "PADRA."

**EXAMPLE-**  
*PS PADRA*

#### Step 4-Aircraft Call Sign:

a. Step 4 shall consist of not more than seven letters or numbers. If fewer than seven letters or numbers are used, insert an ampersand (&) after the last letter or number.

b. Include in all aircraft movement messages the appropriate aircraft operators and United States or Canadian military aircraft designations, followed by the flight numbers specified in the flight plan. Use the tactical military aircraft and foreign military aircraft designations filed in the flight plan.

c. A call sign cannot be revised. If a revision is necessary, cancel the original flight plan and transmit a new "I" type message containing the correct call sign.

#### Step 5-ARTCC AMIS Designators:

a. Step 5 shall consist of one letter.

b. Use the following single-letter designators to identify the transmitting ARTCC/CERAP:



Air Route Traffic Control Center	AMIS Designator
Albuquerque, N.M.	A
Houston, Texas	T
Los Angeles, Calif	L
Miami, Fla	M
New York, N.Y.	N
Oakland, Calif	O

### Step 6-Message Type:

- a. Step 6 shall consist of one character.
- b. All messages shall contain either the letter "I," "R," "D," or "P."

1. "I" signifies a new flight plan.

2. "R" signifies a revision to a previously transmitted message. Revisions to flight plans normally transmitted by ROCC/SOCC data communications equipment may be transmitted by telephone, provided this action is specified in a supplement, and shall be transmitted whenever one of the following conditions exist:

- (a) The delay time or the estimated time of activation is affected by a change of 5 minutes or more.

- (b) There is a deviation in the route of flight of 10 or more nautical miles in domestic area and 20 or more nautical miles in oceanic areas.

- (c) There is a change in groundspeed of 10 percent or more, except when a "P" type message is transmitted.

3. "D" signifies a drop or cancellation of a previously transmitted message.

4. "P" signifies a progress report message.

- (a) Transmit "P" type messages when pilot reports received indicate that the aircraft reported over a check point 5 minutes or more off (before or after) the estimate at the check point previously transmitted in the ROCC/SOCC data communications message.

- (b) "P" type messages shall include Steps 1, 2, 3, 4, 5, 6, 12, 13, and the inactivation symbol (#). Insert in Step 13 the coordinates for the point over which the aircraft checked.

### Step 7-Type of Aircraft:

- a. Step 7 shall consist of not more than four letters or numbers which designate the type of aircraft. If fewer than four letters or numbers are used, insert an ampersand (&) after the last number or letter.

- b. Insert an ampersand (&) when information on the type of aircraft is not available or required.

- c. If Step 7 is the last entry in the message, insert an inactivation symbol (#) after the last entry.

### Step 8-Flight Size:

- a. Step 8 shall consist of two numbers.

- b. Indicate the number of aircraft by the numerals "01" through "31" as appropriate.

- c. When the number of aircraft exceeds 31, insert "31" in Step 8 and transmit the actual number of aircraft in Step 23.

- d. Insert an ampersand (&) when the number of aircraft is not available or required.

### Step 9-Magnetic Heading:

- a. Step 9 shall consist of one character (&).

- b. This item is not operationally required. It is used at present only for programming at the ROCC/SOCC computer location; therefore, insert an ampersand (&).

### Step 10-Altitude:

- a. Step 10 shall consist of three numbers.

- b. Transmit altitudes in hundreds of feet.

1. The maximum altitude that may be transmitted is 99,900 feet and shall be indicated as "999."

2. Transmit DVFR and VFR conditions-on-top as "777."

**EXAMPLE-**  
2,000 feet=020.

- c. When more than one altitude is involved; i.e., formation flights and altitude reservations, transmit the lowest altitude in Step 10 and the highest altitude in Step 23.

- d. Insert an ampersand (&) when the altitude is not available or required.

- e. If Step 10 is the last entry in the message, insert an inactivation symbol (#) following the last entry.

**Step 11-Speed:**

- a. Step 11 shall consist of three numbers.
- b. Calculate speed to the nearest 10-knot increment ending with zero.
- c. The speed transmitted shall be the estimated groundspeed used for air traffic control procedures.
- d. Do not transmit the last digit of the calculated speed.
- e. For speeds less than 1,000 knots, transmit a zero as the first digit.

**EXAMPLE-**

045=450 knots; 102=1,020 knots.

f. Revise the time of activation (Step 12) and/or the point of activation (Step 13), as appropriate, when it is necessary to transmit a revision message changing the groundspeed. (See Step 6b2.)

g. Insert an ampersand (&) when this information is not required.

h. If Step 11 is the last entry in the message, insert an inactivation symbol (#) after the last entry.

**Step 12-Time of Activation:**

a. Step 12 shall consist of four numbers, using Universal Coordinated Time.

b. Predicate activation times on the estimated time or actual time over a correlation line or fix, or the time of departure from a point within the correlation area, and on revisions thereto.

c. When a departure time is used as the time of activation, add 5 minutes to the time of departure, and use this time as the time of activation.

d. When the flight plan data is not received until after penetration of the correlation area, the time transmitted shall be the time over the point of activation. (See Step 13c.)

e. When a previously transmitted flight plan is canceled and a new flight plan transmitted, the time of activation shall be that time determined for the new point of activation. (See Step 13e.)

f. Insert an ampersand (&) when this information is not required.

g. If Step 12 is the last entry in the message, insert an inactivation symbol (#) after the last entry.

**Step 13-Point of Activation:**

a. Step 13 shall consist of eight numbers as follows:

1. The first four numbers of this group shall specify the latitude expressed in degrees and minutes.

**EXAMPLE-**

45 degrees and 32 minutes=4532.

2. The second four numbers of this group shall specify the longitude expressed in degrees and minutes, except that for any longitude degree greater than 99, delete the first digit.

**EXAMPLE-**

85 degrees and 41 minutes=8541.

115 degrees and 45 minutes=1545.

b. Include in an "I" type message and, when required, in revisions thereto, the latitude and longitude coordinates of the point at which the flight crosses the correlation line or the point of departure within the correlation area as appropriate.

c. When the flight plan data is not received until after penetration of the correlation area, insert the point at which the flight entered the correlation area (Step 12).

d. When a previously transmitted flight plan is canceled and a new flight plan transmitted, the point of activation shall be either the estimated present position or the last known check point (see Step 12).

e. Insert an ampersand (&) when this information is not required.

f. If Step 13 is the last entry in the message, insert an inactivation symbol (#) after the last entry.

**Step 14-First Check Point:**

a. Step 14 shall consist of eight numbers.

b. Insert the latitude and longitude coordinates of one of the following:

1. The first check point after the point of activation (Step 13) along the route of flight within a correlation area, or

2. If no reporting or turning point is involved, the point at which the flight departs a correlation area or the point of landing within a correlation area.

c. Insert an ampersand (&) when this information is not required.

d. If Step 14 is the last entry in the message, insert an inactivation symbol (#) after the last entry.

#### Step 15-Second Check Point:

- a. Step 15 shall consist of eight numbers.
- b. Insert the latitude and longitude coordinates of the second check point after the point of activation (Step 13) along the route of flight.
- c. If no reporting or turning point is involved, insert the latitude and longitude coordinates of the point where the flight departs the correlation area or the point of landing within the correlation area.

d. When latitude and longitude coordinates are not available or required, insert an ampersand (&).

#### Step 16-Third Check Point:

- a. Step 16 shall consist of eight numbers.
- b. Insert the latitude and longitude coordinates of the third check point after the point of activation (Step 13) along the route of flight.
- c. If no reporting or turning point is involved, insert the latitude and longitude coordinates of the point where the flight departs the correlation area or the point of landing within the correlation area.
- d. When latitude and longitude coordinates for this check point are not required, insert an ampersand (&).

e. If Step 16 is the last entry in the message, insert an inactivation symbol (#) after the last entry.

#### Step 17-Fourth Check Point:

- a. Step 17 shall consist of eight numbers.
- b. Insert the latitude and longitude coordinates of the fourth check point after the point of activation (Step 13) along the route of flight.
- c. If no reporting or turning point is involved, insert the latitude and longitude coordinates of the point where the flight departs the correlation area or the point of landing within the correlation area.
- d. When latitude and longitude coordinates for this check point are not required, insert an ampersand (&).
- e. If Step 17 is the last entry in the message, insert an inactivation symbol (#) after the last entry.

#### Step 18-Delay Point Indicator:

- a. Step 18 shall consist of one number.
- b. When the delay point is at one of the following, enter the digit shown:
  - 1. Point of activation-0
  - 2. First check point-1
  - 3. Second check point-2
  - 4. Third check point-3
  - 5. Fourth check point-4
- c. When the delay point is beyond the fourth actual check point within the addressee's correlation area, enter in Step 23 a description of the delay area.

#### EXAMPLE-

*DELAY 50 MILE RADIUS 39517221.*

d. When the delay point is not available or required (it is required if a delay time is entered in Step 19), insert an ampersand (&).

e. If Step 18 is the last entry in the message, insert an inactivation symbol (#) after the last entry.

#### Step 19-Delay Time:

- a. Step 19 shall consist of three numbers.
- b. When a delay is involved, insert one of the following:
  - 1. The number of minutes' delay.

#### EXAMPLE-

*45 minutes' delay=045.*

2. When the delay exceeds 599 minutes, enter "599" in Step 19 and enter the total delay in Step 23.

#### EXAMPLE-

*DELAY 692 MINUTES 50 MILE RADIUS 28257805.*

c. After the aircraft reaches the delay area, transmit a revision message revising the time of activation (Step 12) so the delay time does not exceed 599 minutes.

d. To cancel a delay time, transmit an "R" type message (Step 6) and enter "000" in Step 19.

e. When no delay time is available or required (it is required if a delay time is entered in Step 18), insert an ampersand (&).

f. If Step 19 is the last entry in the message, insert an inactivation symbol (#) after the last entry.

**Step 20-SCATANA Priorities:**

a. Step 20 shall consist of one letter and two numbers.

b. Insert the SCATANA PRIORITY expressed by the letter "P" followed by two numbers.

c. When the SCATANA priority is composed of fewer than two numbers, insert a zero before the priority number to make up the required two numbers.

**EXAMPLE-**

SCATANA PRIORITY One=P01

SCATANA PRIORITY Eleven=P11

d. When SCATANA priorities are not in effect, insert an ampersand (&) in this space.

**Step 21-SIF Code:** Insert assigned Mode 3A discrete code.

**Step 22-Inactivation Symbol (#):** Insert the inactivation symbol immediately after the last entry in any message.

**Step 23-Remarks:**

a. Enter remarks, as appropriate, immediately after the inactivation symbol.

b. Enter the following information in Remarks when necessary:

1. All authorized flight plan remarks which may assist in the identification of the aircraft.

2. Aircraft movement information which cannot be completely described within the limitations of format steps, such as altitude reservations, formation flights, or military exercises.

3. The ETD when the activation time is based on a proposed departure time instead of an actual departure time.

**EXAMPLE-**

ETD 1905Z

4. Additional check points. When more than four check points are required to define the route, enter in remarks and do not convert to latitude and longitude.

**EXAMPLE-**

5TH CHECK POINT 38427842 6TH CHECK POINT 39157840

5TH CHECK POINT 41367910 6TH CHECK POINT DELAY 50 MILE RADIUS 41457945 7TH CHECK POINT 41487948.

5. The date-time group in UTC as the last entry of the message.

ROCC/SOCC AIRCRAFT MOVEMENT INFORMATION MESSAGE											
1. Address & Message No.	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
2. Activation Symbol	-	-	-	-	-	-	-	-	-	-	-
3. Flight Plan Category	F	F	F	B	B	S	B	B	F	S	S
4. Aircraft Call Sign	U6345 &	AA120 &	U6345 &	A123 &	A6789 &	A456 &	A123 &	A123 &	U635 &	A841 &	A942 &
5. ARTCC/AMIS Ident	T	T	L	L	M	M	O	O	O	N	N
6. Message Type	I	I	R	I	I	I	R	R	D	I	I
7. Type of Aircraft	B707	DC8 &	&	B52 &	B52 &	B47 &	&	&	#	B58 &	B58 &
8. Flight Size	01	0	&	02	01	01	&	&	-	01	02
9. Heading	&	&	&	&	&	&	&	&	-	&	&
10. Altitude	290	230	&	410	390	270	&	&	-	450	410
11. Speed	045	046	&	370	350	250	&	&	-	590	550
12. Time of Activation	1150	1205	&	1305	1308	1310	&	&	-	1410	1411
13. Point of Activation	44507445	44457440	&	40407070	45457171	41467373	&	&	-	47217842	-
14. First Check Point	44227421	44507510	&	40457075	45487176	41457005	&	&	-	42427371	-
15. Second Check Point	43197600	43157310	&	40557080	&	42037272	&	&	-	#	&
16. Third Check Point	43007545	#	&	&	&	#	&	&	-	-	&
17. Fourth Check Point	43127530	-	43127510	&	&	-	&	&	-	-	&
18. Delay Point Indicator	#	-	#	2	&	-	&	0	-	-	1
19. Delay Time	-	-	-	030	&	-	000	050	-	-	020
20. SCATANA Priority	-	-	-	P01	P04	-	#	#	-	-	#
21. SIF Code	-	-	-	#	#	-	-	-	-	-	-
22. Inactivation Symbol	-	-	-	-	-	-	-	-	-	-	-
23. Remarks	-	-	-	-	-	-	-	-	-	-	-

## **Chapter 6. SECURITY CONTROL OF AIR TRAFFIC AND NAVIGATION AIDS (SCATANA)**

### **Section 1. GENERAL**

#### **6-1-1. SCOPE**

This chapter defines functions and actions required for the implementation of SCATANA. They are in addition to procedures and responsibilities contained in the SCATANA Plan.

#### **6-1-2. COMMAND AUTHORITY**

In areas not under the jurisdiction of CINCNORAD, the Commander in Chief of the Unified/Specified Commands established by the Secretary of Defense for their respective areas of responsibility or the name of their designated subordinate command shall be substituted for CINCNORAD or higher authority whenever such reference appears in this chapter.

## Section 2. RESPONSIBILITIES

### 6-2-1. IMPLEMENTATION INSTRUCTIONS

Implementation instructions will be originated by the NORAD/PACAF/PIADR Region/Sector Commander or higher level.

### 6-2-2. NORAD DISSEMINATION

After coordinating with other affected NORAD units, NORAD Regions/Sectors will notify the Air Traffic Control System Command Center (ATCSCC) of SCATANA instructions to be applied. ATCSCC will disseminate SCATANA instructions in accordance with paragraph 6-3-2.

**NOTE-**

*NORAD/NORAD Regions/Sectors/ATCSCC communications will be via the NORAD Tactical DSN System (NTAS) circuits using appropriate precedence.*

### 6-2-3. NORAD/ARTCC ALIGNMENT

For the purpose of the SCATANA Plan notifications, ARTCC's will be considered to be aligned as follows:

### ARTCC SCATANA PLAN ALIGNMENT

NORAD Region/Sector	ARTCC's
CONR (SE)	Atlanta, Fort Worth, Houston, Indianapolis, Jacksonville, Kansas City, Memphis, Miami, and Washington
CONR (NE)	Boston, Chicago, Cleveland, Minneapolis, and New York
CONR (W)	Albuquerque, Denver, Los Angeles, Oakland
Alaskan NR	Anchorage
Hawaiian NR	Honolulu

TBL 6-2-1

### 6-2-4. DEVELOP LOCAL PROCEDURES

FAA Headquarters and field offices shall take the actions specified herein with regard to developing local procedures and other supporting documents containing appropriate information to be used when the provisions of the SCATANA Plan are implemented. This will ensure that personnel responsible for implementation are familiar with the required SCATANA tests required by the SCATANA Plan, Section VII, SCATANA Testing Procedures.

## Section 3. AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER (ATCSCC)

### 6-3-1. MAINTAIN SCATANA DIRECTIVES

Maintain appropriate SCATANA implementing directives at each operating position.

### 6-3-2. NOTIFY FIELD FACILITIES

Notify and issue appropriate instructions to the following facilities when any portion of SCATANA has been implemented:

- a. ARTCC/CERAP's.
- b. FAA Regional Operations Centers.
- c. FCC for non-Federal NAVAID's.

### 6-3-3. ISSUE FDC NOTAM

Issue an FDC NOTAM which specifies:

- a. The emergency declared.
- b. The geographical areas affected.
- c. The SCATANA rules in effect.
- d. The applicable portion/s of the "Wartime Air Traffic Priority List for Movement of Aircraft."
- e. Other details, not specified above, which will help the aviation interests understand the emergency situation and the restrictions placed on the movement of air traffic.

#### NOTE-

*The example FDC NOTAM below is for guidance purposes only. Although the information contained in this example could conceivably cover all facets of an emergency situation, it does not mean that the information contained could cover all emergency actions that might be placed into effect by the military when the provisions of the SCATANA Plan are implemented.*

#### EXAMPLE-

**AIR DEFENSE EMERGENCY DECLARED  
THROUGHOUT THE 48 UNITED STATES, THE  
DISTRICT OF COLUMBIA, AND STATE OF**

**ALASKA. SCATANA HAS BEEN IMPLEMENTED IN ACCORDANCE WITH THE PLAN FOR THE SECURITY CONTROL OF AIR TRAFFIC AND AIR NAVIGATION AIDS (SCATANA). UNTIL FURTHER ADVISED, NO AIRCRAFT WILL BE ALLOWED TO OPERATE WITHIN THE AIRSPACE OVERLYING THE ABOVE AREAS, THE PACIFIC COASTAL ADIZ, THE SOUTHERN BORDER DOMESTIC ADIZ, THE GULF OF MEXICO COASTAL ADIZ, THE ATLANTIC COASTAL ADIZ, THE ALASKAN DOMESTIC ADIZ, AND THE ALASKAN DEWIZ UNLESS THE AIRCRAFT PROPOSING TO OPERATE WITHIN THE ABOVE AREAS HAVE A PRIORITY ASSIGNMENT OF "ONE" OR "TWO" IN ACCORDANCE WITH THE WARTIME AIR TRAFFIC PRIORITY LIST FOR MOVEMENT OF AIRCRAFT CONTAINED IN SECTION FIVE OF THE SCATANA PLAN. ALL PILOTS, REGARDLESS OF PRIORITY-CIVIL OR MILITARY-CHECK WITH NEAREST FAA OR MILITARY OPERATIONS FACILITY TO DETERMINE CURRENT RESTRICTIONS AND OBTAIN AN AIR TRAFFIC CONTROL CLEARANCE FROM FAA.**

### 6-3-4. DEVELOP PROCEDURES

Develop procedures to provide for:

- a. Effective implementation of SCATANA.
- b. Conducting SCATANA tests to include at a minimum:
  1. Simulating landing and/or diverting of air traffic.
  2. Simulating the control of air navigation aids by specifying the location and type of aid to be controlled, such as VOR/DME, VORTAC, TACAN, radio beacons, ILS/MLS.
  3. Forwarding the messages, as rapidly as possible, to appropriate aeronautical facilities.
  4. Informing the NORAD Region/Sector SCATANA Officer or the ADLO of the control instructions received.



## Section 4. ARTCC/CERAP ACTIONS

### 6-4-1. MAINTAIN SCATANA DIRECTIVES

Maintain appropriate SCATANA implementing directives at each operating position.

### 6-4-2. NOTIFY FIELD FACILITIES

Notify and issue appropriate instructions to the following facilities when any portion of SCATANA has been implemented:

- a. RAPCON's.
- b. RATCF's.
- c. Towers.
- d. Flight service stations.
- e. Appropriate aeronautical facilities.

### 6-4-3. DEVELOP PROCEDURES

Develop procedures to provide for:

- a. Effective implementation of SCATANA.
- b. Conducting SCATANA tests to include at least:
  1. Simulating landing and/or diverting of air traffic.
  2. Simulating the control of air navigation aids by specifying the location and type of aid to be controlled, such as VOR/DME, VORTAC, TACAN, radio beacons, ILS/MLS.
  3. Forwarding the messages, as rapidly as possible, to appropriate aeronautical facilities.
  4. Informing the ATCSCC of the estimated completion times of actions required in the simulated security control instructions received.

### 6-4-4. SCATANA ACTION FORMS

Prepare and distribute to appropriate facilities SCATANA action forms and SCATANA Test cards.

### 6-4-5. EVALUATE TEST ACTIONS

Evaluate test actions by the ARTCC, associated FAA facilities, and other aeronautical facilities to determine adequacy.

a. Take immediate action to correct any deficiencies.

b. Prepare a detailed, narrative statement, and forward to appropriate ADLO's or, where no ADLO is assigned, to the FAA regional office concerned including:

1. Summary of the information contained in the SCATANA Test Reports (see FIG 6-4-1, FAA Form 7610-3).
2. Effectiveness of the SCATANA Plan within the ARTCC's area of responsibility.
3. Recommendations if required.

### 6-4-6. ACTIONS BASED ON INSTRUCTIONS FROM MILITARY

When SCATANA is implemented and the military specifies that air traffic will be diverted and/or required to land, take the following action based on instructions from the military:

- a. Divert aircraft to airports that have runway lengths equal to or longer than those prescribed in the "Desired" columns of TBL 6-7-2 unless military instructions indicate there is insufficient time to take such action.
- b. If the action in subparagraph a, cannot be effected, divert aircraft to airports that have runway lengths equal to or longer than those prescribed in the "Minimum" columns of TBL 6-7-2.
- c. Should mandatory landing be required, the convenience of pilots and passengers is secondary to landing of aircraft with reasonable safety. Circumstances permitting; i.e., weather, instrument approach minima, military instructions, etc., consider selecting an airport which typically accommodates the aircraft being diverted. Landing civil or military aircraft at military bases should be based on prior coordination with appropriate military authorities.

**6-4-7. DIVERSION AIRPORTS**

In conjunction with the appropriate Flight Standards District Offices, prepare and keep current lists of Minimum Diversion Airports and Desired Diversion Airports (see TBL 6-7-1) which include the following information for each airport:

- a. Name of airport.
  - b. City and state.
  - c. Runway information including:
    - 1. Length (utilizing the minimum and desired runway lengths tables for diversion airports in TBL 6-7-2).
    - 2. Surface (use "H" prefix for hard surface).
  - d. Elevation.
  - e. Lighting information including:
    - 1. Boundary lights.
    - 2. Runway lights (indicate on which runway(s) lighting is provided).
    - 3. Approach lights.
- NOTE-**  
*It is not necessary to elaborate on type of lighting.*
- f. Navigation/approach aids (indicate runway(s) aids available).
  - g. Acceptable type aircraft (see TBL 6-7-2).

h. Remarks concerning field facilities not listed above.

**EXAMPLE-**

*Lights on request.*

*Closed dusk to dawn.*

**6-4-8. DISTRIBUTION OF DIVERSION AIRPORT LISTS**

Distribute copies of the Diversion Airport Lists, and subsequent revisions thereto, as follows:

- a. One copy to:
  - 1. FAA regional Air Traffic divisions.
  - 2. Flight Standards Air Carrier District Office.
  - 3. Other appropriate air traffic control facilities located within the ARTCC's flight advisory area.
  - 4. Appropriate ADLO's.
- b. Three copies to:
 

Air Transport Association  
 Attention: Director, ANTC  
 1709 New York Avenue, N.W.  
 Washington, DC 20006

**NOTE-**

*In the event of implementation of SCATANA, all ARTCC/CERAP's and FAA ADLO's, where assigned, will have an immediate need for current lists of Diversion Airports to permit air traffic to be landed with minimum delay.*

# FAA FORM 7610-3 SCATANA TEST REPORT

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION <b>SCATANA TEST REPORT</b>		TEST DATE	FACILITY NAME
ACTION			ACTION TIME (GMT)
1	SCATANA Test Message received from --		Z
2	Broadcast simulated		Z
3	Notification completed (FAA Form 7610-1, item 1A)		Z
4	Area simulated clear of known aircraft		Z
	ARTCC at                      notified		Z
5	Simulated shutdown of air NAVAIDS listed in item 2A, FAA Form 7610-1		Z
6	"Terminate SCATANA/modify emergency SCAT rules" message received		Z
	Simulated return of air NAVAIDS to operation		Z
	Simulated broadcast of "termination/modification" message		Z
OFFICES NOT ALERTED (Listed in item 1A on FAA Form 7610-1)			SIGNATURE OF PERSON REPORTING
FAA Form 7610-3 (12-70)			OMB Approval Not Required RIS: AT 7610-2

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300

POSTAGE AND FEES PAID  
FEDERAL AVIATION ADMINISTRATION  
DOT-515



FIG 6-4-1

## Section 5. FACILITY ACTIONS

### 6-5-1. SCATANA ACTION FORMS AT OPERATING POSITIONS

Maintain a copy of the SCATANA Action Form at the operating position(s).

### 6-5-2. COMPLY WITH ARTCC/CERAP INSTRUCTIONS

Comply with the provisions of the FAA Form 7610-1 and any additional instructions received from the ARTCC/CERAP. (See FIG 6-5-1, FAA Form 7610-1, Aeronautical Facility: SCATANA Actions.)

# **FAA FORM 7610-1, AERONAUTICAL FACILITY: SCATANA ACTIONS**

<b>AERONAUTICAL FACILITY—SCATANA ACTIONS</b> <i>(Post at operating position)</i>																																																																																																												
_____ will receive SCATANA instructions implemented by _____ NORAD Region via _____ from _____ (⊕facility). (If instructions are received from other sources, check with the facility listed above to verify instructions.)																																																																																																												
<b>AIR DEFENSE INSTRUCTIONS</b>																																																																																																												
<b>1. AIR TRAFFIC CONTROL</b> Upon receipt of instructions to implement SCATANA Plan take the following actions immediately: <b>A. Notify—</b> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 30%;">Office</th> <th style="text-align: left; width: 40%;">Telephone Number</th> <th style="text-align: left; width: 30%;">Time</th> </tr> </thead> <tbody> <tr><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td></tr> </tbody> </table> * Does not participate in SCATANA tests. <b>B. Broadcast SCATANA instructions exactly as received from ⊕facility 3 times at 2 minute intervals on all available frequencies. Rebroadcast once each hour thereafter until instructed otherwise.</b> "ATTENTION, ATTENTION ALL AIRCRAFT, SPECIAL AIR DEFENSE INSTRUCTIONS. IN ACCORDANCE WITH FEDERAL AVIATION REGULATION 99, SPECIAL SECURITY INSTRUCTIONS ARE IN EFFECT FOR ALL OPERATIONS WITHIN (DEFINED AREA). (SCATANA INSTRUCTIONS PERTAINING TO AIRCRAFT OPERATIONS VERBATIM AS RECEIVED FROM ⊕FACILITY). AIRCRAFT ON IFR FLIGHT PLANS REMAIN ON THIS FREQUENCY FOR ADDITIONAL INSTRUCTIONS AND/OR NEW CLEARANCES".		Office	Telephone Number	Time	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	<b>2. CONTROL OF NAVAIDS</b> Upon receipt of instructions to implement the SCATANA Plan, take the following actions immediately: <b>A. Shutdown the following NAVAIDS in accordance with instructions received from ⊕facility:</b> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 20%;">Time</th> <th style="text-align: left; width: 20%;">Location</th> <th style="text-align: left; width: 20%;">Time Req.</th> <th style="text-align: left; width: 40%;">Method of Control</th> </tr> </thead> <tbody> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> </tbody> </table> <b>B. Restore the above NAVAIDS in accordance with instructions received from ⊕facility:</b> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 20%;">Time</th> <th style="text-align: left; width: 20%;">Location</th> <th style="text-align: left; width: 20%;">Type</th> <th style="text-align: left; width: 40%;">Time Restored</th> </tr> </thead> <tbody> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td><td>_____</td><td>_____</td></tr> </tbody> </table> <b>C. Advise ARTCC when all NAVAIDS are shut down and also as soon as practicable when they are individually restored.</b>		Time	Location	Time Req.	Method of Control	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	Time	Location	Type	Time Restored	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
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<b>SCATANA TESTS</b>																																																																																																												
<b>1. Upon receipt of information that the provisions of the SCATANA Plan are being tested, notify the offices participating (listed in item 1A without an asterisk).</b> "THIS IS A SCATANA TEST _____ NORAD REGION AREA. REPEAT, THIS IS A SCATANA TEST _____ NORAD REGION AREA. SIMULATE SCATANA ACTIONS. DO NOT BROADCAST THIS MESSAGE OVER AIR-GROUND RADIO. DO NOT SHUT DOWN NAVAIDS OR SUSPEND FLIGHT OPERATIONS. THIS IS A SCATANA TEST ONLY."																																																																																																												
<b>2. Upon receipt of information that the SCATANA Test is terminated, notify the participating offices (listed in item 1A without an asterisk).</b> "SCATANA TEST TERMINATED IN _____ NORAD REGION AREA."																																																																																																												
<b>A. SIMULATE other SCATANA actions.</b> <b>B. Complete the SCATANA Test Report, FAA Form 7610-3, and forward to the appropriate office.</b>																																																																																																												
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FAA Form 7610-1 (12-78)

FIG 6-5-1

## **Section 6. ADLO/REGIONAL OFFICE ACTIONS**

### **6-6-1. NARRATIVE REPORTS**

The FAA ADLO or the FAA Regional Office when no ADLO is assigned shall:

a. Evaluate SCATANA Narrative Reports (RIS AT 7610-2) and prepare a narrative report (RIS AT 7610-3) concerning the effectiveness of these tests.

b. Forward one copy of the narrative report to:

1. Appropriate NORAD/PIAD Region/Sector Headquarters.

2. FAA regions concerned.

3. FAA Liaison Office, Headquarters, North American Aerospace Defense Command, Peterson Air Force Base, CO 80914-5001.

4. Appropriate ARTCC.

### **6-6-2. SCATANA PLAN SUPPLEMENTS**

a. The FAA regional Air Traffic division and the ADLO's concerned shall prepare and revise, as necessary, SCATANA Plan supplements and coordinate them with the appropriate NORAD/PIADR Command authorities and other concerned FAA regions.

b. The FAA regional Air Traffic division managers and the NORAD/PIAD Region Deputy for Operations shall sign supplemental agreements.

## Section 7. DIVERSION AIRPORTS

### 6-7-1. INSTRUCTIONS FOR COMPILING DIVERSION AIRPORT LISTS AND HOW TO USE THE AVAILABLE LANDING LENGTH DATA

#### REFERENCE- PARAGRAPH 6-4-7.

a. Enter the following data for each airport listed in columns numbered 1 through 9 as appropriate:

1. Column 1-Name of airport.

2. Column 2-City and state where the airport is located.

3. Column 3-The highest class of aircraft which can be landed at this airport when the conditions specified in paragraph 6-4-6a are in effect. The class of aircraft entered indicates that all aircraft in this class and all other aircraft listed in lower numbered classes can be landed at this airport.

4. Column 4-The highest class of aircraft which can be landed at this airport when the conditions specified in paragraph 6-4-6b are in effect. The class of aircraft entered indicates that all aircraft listed in this class as well as all other aircraft listed in lower numbered classes can be landed at that airport.

5. Column 5-Length of the longest runway in feet. If the runway is hard surfaced, enter "H" preceding the length.

6. Column 6-Field elevation.

7. Column 7-Airport lighting installations. Indicators are the same as those used in Airport/Facility Directory.

8. Column 8-Navigation and approach aids available at this airport.

9. Column 9-Remarks concerning field facilities not listed above. However, information concerning landing weight of the aircraft and/or runway weight limitations should not be entered since these landings are to be made under a Defense and/or Air Defense Emergency Condition and continuous operations from these airports are not anticipated.

b. In order to determine the format of the items listed (see TBL 6-7-1) when the name of the city and state (Column 2) and the name of the airport (Column 1) are known, aircraft class entries for Column 3 (Desired) and/or Column 4 (Minimum), as appropriate, can be determined for airports at any elevation from sea level through 7,000 feet by using the following procedures:

1. Determine the field elevation, Column 6.

2. Then determine the longest runway at the airport, Column 5. Sample: Redmond Airport, OR, is 3,077 feet above sea level; its longest runway is 7,040 feet long. What class of aircraft can be diverted to this airport?

3. Using the airport elevation (3,077 feet) and the runway length (7,040 feet) from Columns 5 and 6 of the airport list, move to the landing tables, paragraph TBL 6-7-2.

### DIVERSION AIRPORT LIST FOR AIR ROUTE TRAFFIC CONTROL CENTERS

DESIRED AND MINIMUM LANDING LENGTHS FOR SCATANA PLAN DIVERSION AIRPORTS								
Name of Airport	Location City & State	Suitable Aircraft Classes for this Airport		Runway Length	Airport Elevation	Airport Lighting	NAVAID's	Remarks
		Desired	Minimum					
Roberts Field	Redmond (RDM), OR	IV	V	H7,040 Ft.	3,077 Ft.	B/HIRL	(H) VOR-TACW/ILS	Continuously attended. For lights, call RDM FSS

TBL 6-7-1

4. Look under the 4,000-foot pressure altitude (always use the next 1,000 feet above the field elevation) column and read down the desired runway column until a runway length appears which is longer than 7,040 feet. If none were longer, you would go to the next higher page; however, in this instance a runway length of 7,130 feet is found. A check at the top of the page indicates that 7,130 feet is suitable for Class V aircraft and 7,040 feet is not. Therefore, Redmond Airport is suitable for Class IV aircraft and below as a desirable diversion airport but is unsuitable for Classes V and VI.

5. After determining that Class IV is the highest class of aircraft that can be diverted to Redmond Airport under a desired situation (TBL 6-7-2), move back to the airport list (See TBL 6-7-1) and place IV in Column 3, Aircraft Classes. Repeat the same process using the minimum values in the tables to determine the class of aircraft which can be diverted to Redmond Airport when conditions of minimum landing requirements are in effect. Minimum requirements (TBL 6-7-2) always permit an airport to accommodate a higher class of aircraft than a desired landing situation. Using minimum landing requirements, Redmond Airport is suitable for recovery of Class V aircraft.

6. Many airports have longer runways than any of the landing lengths listed under desired and/or minimum requirements at all computed altitudes. When this situation exists, enter VI in Columns 3 and 4 under Aircraft Classes on the airport list. This indicates that all aircraft on the list can be diverted to those airports whether desired or minimum situations exist.

7. Under certain circumstances, the nearest airport may be a considerable distance from the aircraft's position or located in a target area while a smaller airport closer to the aircraft and outside the target area may be acceptable from a safety standpoint. If time permits, the pilot should be queried as to the acceptability of the small diversion airport. The pilot is in a position to make a determination considering the actual weight of the aircraft at the time, the airport layout, wind, temperature, etc. If the pilot advises the smaller diversion airport is acceptable, the aircraft shall be so diverted. In the event a pilot requests diversion to a smaller airport than listed for this type aircraft, the request will be honored if such a change in

diversion airport is within the parameters of the military's instructions or if required approval can be obtained.

8. Military aircraft, where possible, without undue delay should be recovered at military bases. It follows that general aviation aircraft, where recovery time will not be derogated, should, as a general guide, be handled at general aviation airports. In those situations where the requests from the military are so urgent that nontactical air traffic must be landed immediately, it shall be diverted to the most suitable airport without delay.

#### 9. Definition of Terms.

(a) Tactical Air Traffic. Military flights engaged in operational missions against the enemy, flights engaged in immediate deployment for a combat mission, and preplanned control and logistical support flights contained in Emergency War Plans.

(b) Nontactical Air Traffic. Civil or military flights other than tactical air traffic, subparagraph (a), above.

### 6-7-2. DIVERSION AIRPORTS LANDING LENGTHS (DISTANCES) REQUIRED FOR MINIMUM DIVERSION AIRPORTS AND DESIRED DIVERSION AIRPORTS

a. In developing suitable criteria for desired diversion airports and minimum diversion airports, two standards for landing lengths were established. They are defined as follows:

1. A desired diversion airport is one at which the longest usable runway is of such length as to afford a normal landing for a specific class of aircraft when the aircraft's landing characteristics are computed for the field elevation of the airport under consideration.

2. A minimum diversion airport is one at which the longest usable runway is of such length which will afford a safe landing for a specific class of aircraft when the aircraft's landing characteristics are computed for the field elevation of the airport under consideration. Minimum diversion airports will usually be used only when immediate landing of an aircraft is required.

b. Requirements for desired and minimum diversion airports are computed for pressure



altitudes from sea level to 7,000 feet altitude. The computed values are based on the maximum allowable structural landing weights for the aircraft, and airport conditions of no wind, no runway slope, and no approach or climb limitations were applied. Computed landing lengths for air carrier aircraft by class are shown in TBL 6-7-2.

**c.** To facilitate rapid selection of diversion airports when SCATANA is implemented, the most frequently used transport aircraft have been divided into six classes. Each class is based on the length of runway required for safe operations for all aircraft within its general class. As new aircraft are developed and enter the air carrier inventory, they will be added to the class which best accommodates their runway requirements.

**d.** In assigning aircraft to similar classes, the following ground rules were followed for selecting both desired and minimum diversion airports:

**1.** The minimum runway lengths required for each aircraft to land at sea level and at each thousand foot altitude through 7,000 feet.

**2.** Grouping aircraft according to their landing lengths required without regard to manufacturer.

**3.** Keeping the difference between the shortest and the longest runway required to land the aircraft listed in each class to a practicable limit.

**4.** Only limited types of general aviation and business aircraft are included in the aircraft classes since their landing characteristics usually permit them to be recovered at most airports where air traffic is controlled.

**e.** The current listing of transport aircraft has been subdivided into Classes I through VI according to categories of runway landing lengths each class requires. Within each aircraft class, the runway landing lengths required for individual aircraft are stated for airports located at altitudes from sea level to 7,000 feet MSL. (See TBL 6-7-2).

**CURRENT AIR TRANSPORT AIRCRAFT SUBDIVIDED INTO CLASSES I THROUGH VI  
ACCORDING TO LANDING LENGTHS REQUIRED ON HARD SURFACE RUNWAYS AT ALTITUDES  
FROM SEA LEVEL TO 7,000 FEET PRESSURE ALTITUDE**

<b>Class I Aircraft</b>	<b>Class II Aircraft</b>	<b>Class III Aircraft</b>	<b>Class IV Aircraft</b>	<b>Class V Aircraft</b>	<b>Class VI Aircraft</b>
<b>Aerospatiale/Aeritalia</b>	<b>British Aerospace</b>	<b>Beechcraft</b>	<b>Airbus Industrie</b>	<b>Boeing</b>	<b>Airbus Industrie</b>
ATR42	BAe 146-100A	Model-400	A310-203	B707-100 Series	A300B2-203
	BAe 146-200A		A310-221/222	(C-135A)	A300B4-103
	Jetstream 3101	<b>Boeing</b>		B707-100B Series	A300B4-203
<b>CASA</b>		B727-100	<b>Argosy</b>	(C-135B)	
C212-CB	<b>Cessna</b>	B727-200	AW-650 Series 101	B707-200 Series	Aero Commander
C212-CC/CD/CE/CF	Cessna 500	B737-100		B707-300B Series	Jet Commander
	Cessna 550	B737-300	<b>Boeing</b>	B707-300C Series	1121,1121A
<b>DeHavilland</b>		B757-200	B737-200	B720 Series	
DHC-4 Caribou(C-7A)	<b>Embraer</b>		B737-200 Advanced	B720B Series	<b>Boeing</b>
DHC-6-300	EMB-120	<b>British Aerospace</b>	B767-200		Q707-100B
DHC-8-101		BAC 1-11-200 Series		<b>British Aerospace</b>	Q707-300B Advanced
	<b>Fairchild</b>	BAC 1-11-203 AE	<b>Hamburger Flugzeugbau</b>	VC-10	B707-300 Series
<b>Fairchild Republic</b>	FH-227 Series	BAC 1-11-400 Series		Super VC-10	(VC-137)
F-27		BAe 125 (All Series)	HFB 320 Hansa Jet	Britannia Series 305	B707-400 Series
	<b>General Dynamics (Convair)</b>			Britannia Series 312	B747-100 Series
<b>McDonnell/Douglas</b>		<b>Cessna</b>	<b>Lockheed</b>		B747-200 Series
DC-3 (C-47)	CV-240 Unmodified	Cessna S-550	L-329 Jetstar	<b>Canadair</b>	
	CV-240 Modified	Cessna-650	(C-140)	CL-44 B-4	<b>British Aerospace/Aerospatiale</b>
	CV-340 (T-29, C-131)				
	CV-440	<b>DeHavilland</b>	<b>McDonnell/Douglas</b>	<b>Dassault/SUD</b>	Concorde
	CV-340/440 Allison	DHC-7-100	DC-9-80	Mystere 20	
	CV-340/440 Napier				<b>Canadair</b>
	<b>Hawker Siddeley</b>	Gates Learjet	<b>Rockwell</b>	<b>Lockheed</b>	CL 600-1A77
	DH-125 Series 1/A	Model-24E	Sabreliner 265/T-39	L-1011-1	CL 600-2A12
	DH-125 Series 3/A	Model-25D/F	Basic	L-1011-1-14	
		Model-35A/36A	Sabreliner 65	L-1011-1-15	<b>Lockheed</b>
		Model-55	Sabreliner 70	L-1011-3	L-300 (C-141A)
	<b>Martin</b>				L-382 (C-130E)
	M-202	<b>General Dynamics (Convair)</b>		<b>McDonnell/Douglas</b>	L-500 (C-5A)
	M-404				
		C-640		DC-8-62	
				DC-8-72	<b>McDonnell/Douglas</b>
		<b>Gulfstream</b>		DC-8F-54	DC-8-12-21-51
		G-111 Flying Boat		DC-10-10	DC-8-31-32-41-52
		G-1159 Gulfstream I		DC-10-30 (KC-10A)	DC-8-33-42-43-53
				DC-10-40	DC-8-63

Class I Aircraft	Class II Aircraft	Class III Aircraft	Class IV Aircraft	Class V Aircraft	Class VI Aircraft
		G-1159 Gulfstream II  <b>Lockheed</b> L-188 L-382F (C-130) L-382G (C-130)  <b>McDonnell/Douglas</b> DC-6A (C-118) DC-9 Series 10 DC-9 Series 30 DC-9 Series 40 DC-9 Series 50  Mitsubishi Diamond I/MU3 Diamond II/MU2  Rockwell Sabreliner 40 Sabreliner 60 Sabreliner 80			DC-8-71 DC-8-73

TBL 6-7-2

**Class I Aircraft: Landing Lengths Required at Airports with Hard Surface Runways**

A MINIMUM (M) LENGTH OF 2,220 FEET AT SEA LEVEL TO A DESIRED (D) LENGTH OF 4,300 FEET AT 7,000 FEET PRESSURE ALTITUDE																	
D-Desired Landing Lengths/M-Minimum Landing Lengths																	
Aircraft this Class	Sea Level		1,000		2,000		3,000		4,000		5,000		6,000		7,000		
	SL-1,000		1,000-2,000		2,000-3,000		3,000-4,000		4,000-5,000		5,000-6,000		6,000-7,000		7,000-8,000		
	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	
Aerospatale/ Aeritalia																	
ATR	3,400	2,920	3,470	2,980	3,530	3,030	3,610	3,100	3,690	3,170	3,780	3,240	3,870	3,320	3,970	3,410	
CASA																	
C212-CB	2,570	2,210	2,630	2,260	2,630	2,260	2,630	2,260	2,660	2,280	2,660	2,280	2,660	2,280	2,680	2,300	
C212-CC/ CD/CE/CF	3,180	2,730	3,210	2,760	3,280	2,820	3,340	2,870	3,390	2,910	3,470	2,980	3,480	2,990	3,480	2,990	
DeHaviland																	
DHC-4 Caribou (C-7A)	2,590	2,220	2,640	2,260	2,700	2,310	2,780	2,380	2,850	2,440	2,930	2,510	3,000	2,570	3,080	2,640	
DHC-6-300	2,500	2,150	2,570	2,210	2,630	2,260	2,700	2,320	2,770	2,380	2,830	2,430	2,920	2,510	3,000	2,580	
DHC-8-101	3,230	2,770	3,280	2,820	3,380	2,900	3,470	2,980	3,530	3,030	3,580	3,070	3,670	3,150	3,750	3,220	
Fairchild Republic																	
F-27	3,540	3,030	3,620	3,100	3,710	3,180	3,800	3,260	3,900	3,340	3,990	3,420	4,100	3,510	4,190	3,590	
McDonnell/Douglas																	
DC-3 (C-47)	3,630	3,110	3,710	3,180	3,800	3,260	3,900	3,340	3,990	3,420	4,080	3,500	4,180	3,580	4,280	3,670	
Highest Minimum Landing Length this Class		3,110		3,180		3,260		3,340		3,420		3,500		3,580		3,670	

### Class II Aircraft: Landing Lengths Required at Airports with Hard Surface Runways

A MINIMUM (M) LENGTH OF 3,300 FEET AT SEA LEVEL TO A DESIRED (D) LENGTH OF 5,200 FEET AT 7,000 FEET PRESSURE ALTITUDE																
D-Desired Landing Lengths/M-Minimum Landing Lengths																
Aircraft this Class	Sea Level		1,000		2,000		3,000		4,000		5,000		6,000		7,000	
			SL-1,000		1,000-2,000		2,000-3,000		3,000-4,000		4,000-5,000		5,000-6,000		6,000-7,000	
	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M
British Aerospace																
BAe 146-100A	3,480	2,985	3,570	3,060	3,650	3,130	3,740	3,205	3,820	3,275	3,910	3,355	4,010	3,440	4,170	3,575
BAe 146-200A	3,980	3,415	4,050	3,475	4,120	3,535	4,210	3,610	4,290	3,680	4,380	3,755	4,460	3,825	4,650	3,985
Jetstream 3101	3,840	3,295	3,900	3,345	3,970	3,405	4,050	3,475	4,140	3,550	4,220	3,625	4,300	3,685	4,400	3,775
Cessna																
M-500	3,780	3,240	3,860	3,310	3,940	3,380	4,030	3,460	4,110	3,536	4,200	3,600	4,280	3,670	4,380	3,760
M-550	3,780	3,240	3,850	3,300	3,950	3,390	4,090	3,510	4,240	3,640	4,400	3,780	4,590	3,940	4,780	4,100
Embraer																
EMB-120	4,400	3,780	4,500	3,860	4,600	3,950	4,710	4,040	4,825	4,140	4,940	4,240	5,050	4,320	5,175	4,435
Fairchild																
FH-227 Series	4180	3570	4280	3660	4390	3750	4500	3860	4610	3960	4720	4060	4840	4160	4960	4270
General Dynamics (Convair)																
CV-240 Modified	4,310	3,680	4,430	3,780	4,550	3,890	4,670	3,990	4,790	4,090	4,920	4,200	5,030	4,310	5,160	4,410
CV-240 Unmodified	3,800	3,260	3,900	3,340	4,000	3,430	4,110	3,520	4,220	3,620	4,340	3,720	4,470	3,830	4,590	3,930
CV-340 (T-29, C-131)	3,970	3,400	4,080	3,500	4,180	3,580	4,290	3,680	4,410	3,780	4,520	3,870	4,630	3,970	4,740	4,060
CV-340/44 O Allison	4,170	3,570	4,240	3,630	4,320	3,700	4,410	3,780	4,500	3,860	4,590	3,930	4,690	4,020	4,770	4,090
CV-340/44 O Napier	4,040	3,460	4,120	3,530	4,210	3,610	4,290	3,680	4,390	3,760	4,500	3,860	4,590	3,930	4,690	4,020
CV-440	4,040	3,460	4,150	3,560	4,270	3,660	4,390	3,770	4,500	3,860	4,620	3,960	4,740	4,060	4,850	4,160
Hawker Siddeley																
DH-125 Series 1A-522	4,000	3,430	4,100	3,520	4,200	3,600	4,300	3,690	4,410	3,780	4,510	3,870	4,610	3,950	4,720	4,050
DH-125 Series 3/A, 3A/R	4,070	3,490	4,180	3,590	4,280	3,670	4,390	3,770	4,500	3,860	4,600	3,950	4,710	4,040	4,820	4,140
Martin																
M-202	4,010	3,440	4,120	3,530	4,220	3,620	4,340	3,720	4,460	3,820	4,570	3,920	4,690	4,020	4,810	4,120
M-404	3,920	3,360	4,030	3,450	4,130	3,540	4,250	3,640	4,360	3,740	4,480	3,840	4,610	3,950	4,750	4,070
SAAB																
SF 340A	4,210	3,610	4,300	3,685	4,390	3,765	4,500	3,860	4,600	3,945	4,710	4,040	4,820	4,135	5,050	4,330
Short Brothers																
SD3-30	3,670	3,145	3,740	3,205	3,810	3,265	3,920	3,370	4,010	3,440	4,090	3,505	4,200	3,600	4,310	3,695
SD3-60	4,010	3,440	4,110	3,525	4,210	3,610	4,310	3,695	4,410	3,780	4,520	3,875	4,630	3,970	4,730	4,055
Highest Minimum Landing Length this Class		3,780		3,860		3,950		4,040		4,140		4,240		4,320		4,435

### Class III Aircraft: Landing Lengths Required at Airports with Hard Surface Runways

A MINIMUM (M) LENGTH OF 3,810 FEET AT SEA LEVEL TO A DESIRED (D) LENGTH OF 6,400 FEET AT 7,000 FEET PRESSURE ALTITUDE																	
D-Desired Landing Lengths/M-Minimum Landing Lengths																	
Aircraft this Class	Sea Level		1,000		2,000		3,000		4,000		5,000		6,000		7,000		
			SL-1,000		1,000-2,000		2,000-3,000		3,000-4,000		4,000-5,000		5,000-6,000		6,000-7,000		
	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	
Beachcraft																	
Model-400	4,710	4,040	4,800	4,120	4,920	4,220	5,030	4,320	5,030	4,320	5,130	4,400	5,280	4,530	5,380	4,620	
Boeing																	
B727-100	5,070	4,350	5,180	4,440	5,280	4,530	5,400	4,640	5,510	4,730	5,630	4,830	5,740	4,920	5,870	5,040	
B727-200	5,180	4,440	5,280	4,530	5,380	4,620	5,500	4,720	5,610	4,810	5,740	4,920	5,870	5,040	6,010	5,160	
B727-200 Series	5,040	4,320	5,140	4,400	5,240	4,490	5,340	4,580	5,450	4,670	5,550	4,760	5,680	4,870	5,800	4,975	
B737-100	5,300	4,550	5,440	4,670	5,580	4,790	5,710	4,900	5,860	5,030	6,000	5,150	6,150	5,280	6,300	5,400	
B737-200	4,880	4,190	5,000	4,210	5,130	4,400	5,260	4,510	5,380	4,620	5,530	4,740	5,690	4,880	5,840	5,010	
B737-300	5,400	4,630	5,530	4,740	5,660	4,860	5,790	4,970	5,930	5,090	6,090	5,220	6,230	5,340	6,390	5,480	
B757-200	4,880	4,190	5,000	4,210	5,130	4,400	5,260	4,510	5,380	4,620	5,530	4,740	5,690	4,880	5,840	5,010	
British Aerospace																	
BAe 125 All Series	4,600	3,945	4,710	4,040	4,820	4,135	4,930	4,225	5,050	4,320	6,180	4,440	5,300	4,545	5,430	4,555	
BAC 1-11-200 Series	4,980	4,270	5,120	4,390	5,250	4,500	5,380	4,610	5,520	4,730	5,670	4,470	5,820	4,990	5,970	5,120	
BAC 1-11-203 AE	5,230	4,480	5,370	4,600	5,480	4,700	5,620	4,820	5,760	4,940	5,940	5,090	-	-	-	-	
BAC 1-11-400 Series	5,170	4,440	5,300	4,550	5,420	4,650	5,560	4,790	5,720	4,920	5,870	5,060	6,020	5,170	6,180	5,320	
Cessna																	
Model S-550	5,230	4,490	5,370	4,610	5,520	4,740	5,670	4,860	5,830	5,000	6,000	5,150	6,190	5,315	6,390	5,480	
Model 650	5,300	4,550	5,430	4,660	5,570	4,780	5,700	4,890	5,850	5,020	6,020	5,160	6,180	5,300	6,360	5,460	
DeHavilland																	
DHC-7-100	5,000	4,290	5,100	4,380	5,200	4,460	5,300	4,550	5,400	4,630	5,500	4,720	5,600	4,800	5,700	4,890	
Gates Learjet																	
Model-24E	4,750	4,080	4,900	4,200	5,000	4,290	5,120	4,390	5,250	4,500	5,420	4,650	5,500	4,720	5,670	4,860	
Model- 25D/F	4,750	4,080	4,830	4,140	4,970	4,260	5,000	4,290	5,120	4,390	5,170	4,440	5,150	4,500	5,330	4,570	
Model- 35A/36A	5,000	4,290	5,170	4,440	5,200	4,460	5,330	4,570	5,420	4,650	5,500	4,720	5,670	4,860	5,830	5,000	
Model-55	5,270	4,520	5,330	4,570	5,420	4,650	5,500	4,720	5,580	4,790	5,750	4,920	5,880	5,040	6,000	5,150	
General Dynamics (Convair)																	
CV-640	4,380	3,760	4,530	3,870	4,670	4,000	4,830	4,130	5,000	4,280	5,170	4,430	5,350	4,590	5,550	4,760	
Gulfstream																	
G-111 Flying Boat	5,085	4,360	5,190	4,450	5,295	4,540	5,410	4,640	5,520	4,740	5,635	4,830	5,755	4,940	-	-	
G-159 Gulfstream I	4,570	3,920	4,710	4,040	4,850	4,160	4,990	4,280	5,150	4,410	5,320	4,560	5,520	4,730	5,690	4,880	
G-159 Gulfstream II	5,030	4,330	5,250	4,510	5,460	4,690	5,650	4,860	5,880	5,050	6,090	5,230	6,300	5,400	6,500	5,580	

A MINIMUM (M) LENGTH OF 3,810 FEET AT SEA LEVEL TO A DESIRED (D) LENGTH OF 6,400 FEET AT 7,000 FEET PRESSURE ALTITUDE																
D-Desired Landing Lengths/M-Minimum Landing Lengths																
Aircraft this Class	Sea Level		1,000		2,000		3,000		4,000		5,000		6,000		7,000	
			SL-1,000		1,000-2,000		2,000-3,000		3,000-4,000		4,000-5,000		5,000-6,000		6,000-7,000	
	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M
Lockheed																
L-188	4,880	4,180	5,030	4,310	5,180	4,440	5,330	4,570	5,480	4,700	5,640	4,830	5,800	4,970	5,990	5,130
L-382F (C-130)	4,200	3,600	4,800	4,120	4,950	4,250	5,100	4,380	5,250	4,500	5,400	4,630	5,575	4,780	5,750	4,930
L-382G (C-130)	4,875	4,180	5,000	4,290	5,150	4,420	5,300	4,550	5,500	4,720	5,650	4,850	5,850	5,020	6,000	5,150
McDonnell/Douglas																
DC-6A (C-118)	5,020	4,300	5,160	4,420	5,300	4,540	5,430	4,650	5,570	4,770	5,710	4,890	5,850	5,010	5,980	5,120
DC-9 Series 10	5,040	4,320	5,130	4,400	5,280	4,520	5,430	4,650	5,580	4,780	5,730	4,900	5,880	5,040	6,040	5,170
DC-9 Series 30 (C-9A)	4,660	4,000	4,780	4,100	4,900	4,200	5,030	4,310	5,150	4,420	5,290	4,540	5,430	4,650	5,580	4,780
DC-9 Series 40	4,780	4,100	4,910	4,210	5,030	4,320	5,160	4,450	5,280	4,530	5,420	4,650	5,550	4,760	5,780	4,920
DC-9 Series 50	4,780	4,100	4,910	4,210	5,030	4,320	5,160	4,430	5,280	4,530	5,420	4,650	5,550	4,760	5,780	4,920
Mitsubishi																
Diamond I/ MU3	5,030	4,320	5,140	4,410	5,250	4,500	5,365	4,510	5,480	4,700	5,590	4,800	5,700	4,890	5,840	5,010
Diamond II/ MU2	5,080	4,360	5,190	4,450	5,290	4,540	5,440	4,670	5,580	4,790	5,730	4,920	5,880	5,040	6,040	5,180
Rockwell																
Sabreliner 40	4,880	4,190	5,030	4,320	5,170	4,440	5,300	4,550	5,420	4,650	5,620	4,820	5,870	5,040	6,170	5,290
Sabreliner 60	5,030	4,320	5,100	4,380	5,220	4,480	5,350	4,590	5,500	4,720	5,580	4,790	5,720	4,910	5,930	5,090
Sabreliner 80	4,670	4,010	4,780	4,100	4,880	4,190	5,020	4,310	5,170	4,440	5,330	4,570	5,500	4,720	5,750	4,930
Highest Minimum Landing Length this Class		4,630		4,740		4,860		4,970		5,090		5,220		5,340		5,480

# **CLASS IV AIRCRAFT: LANDING LENGTHS REQUIRED AT AIRPORTS WITH HARD SURFACE RUNWAYS**

A MINIMUM (M) LENGTH OF 4,700 FEET AT SEA LEVEL TO A DESIRED (D) LENGTH OF 7,200 FEET AT 7,000 FEET PRESSURE ALTITUDE																	
D-Desired Landing Lengths/M-Minimum Landing Lengths																	
Aircraft this Class	Sea Level		1,000		2,000		3,000		4,000		5,000		6,000		7,000		
	SL-1,000		1,000-2,000		2,000-3,000		3,000-4,000		4,000-5,000		5,000-6,000		6,000-7,000		6,000-7,000		
	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	
Airbus Industrie																	
A310-203	5,470	4,690	5,580	4,790	5,740	4,920	5,850	5,120	5,960	5,110	6,130	5,260	6,350	5,450	6,560	5,630	
A310-221/ 222	5,470	4,690	5,580	4,790	5,740	4,920	5,910	5,070	6,070	5,210	6,240	5,350	6,350	5,450	6,670	5,720	
Argosy																	
AW-650 Series 101	5,510	4,725	5,710	4,890	5,890	5,050	6,100	5,225	6,300	5,400	6,480	5,550	6,650	5,700	6,800	5,830	
Boeing																	
B737-200	5,700	4,890	5,850	5,020	5,980	5,130	6,030	5,260	6,270	5,380	6,430	5,520	6,590	5,650	6,740	5,780	
B737-200 Advanced	5,500	4,720	5,650	4,850	5,830	4,500	6,020	5,160	6,220	5,340	6,420	5,510	6,630	5,690	6,850	5,870	
B767-200	5,500	4,720	5,600	4,600	5,730	4,920	5,860	5,030	6,000	5,150	6,140	5,270	6,300	5,400	6,450	5,530	
Hamburger Flugzeugbau																	
HFB 320 Hansa Jet	5,750	5,000	5,830	5,090	5,920	5,170	6,020	5,270	6,140	5,370	6,290	5,500	6,460	5,630	6,670	5,820	
Lockheed																	
L-1049 (C-121)	5,660	4,850	5,840	5,000	5,990	5,130	6,160	5,280	6,310	5,410	6,480	5,550	6,640	5,690	6,800	5,830	
L-329 Jet Star (C-140, VC140)	5,480	4,700	5,650	4,930	5,810	4,980	5,930	5,120	6,140	5,260	6,460	5,540	6,800	5,830	7,130	6,110	
McDonnell/Douglas																	
DC-9-80	5,850	5,020	5,990	5,140	6,120	5,250	6,260	5,370	6,400	5,490	6,680	5,730	6,950	5,960	6,990	5,990	
Rockwell																	
NA-265 Basic (T-39)	5,720	4,900	5,850	5,010	6,000	5,140	6,140	5,260	6,300	5,400	6,540	5,600	6,840	5,860	7,120	6,100	
Sabreliner 70	5,420	4,650	5,580	4,790	5,670	4,860	5,830	5,000	5,930	5,090	6,130	5,260	6,380	5,480	6,670	5,720	
Highest Minimum Landing Length this Class		5,020		5,140		5,250		5,370		5,490		5,730		5,960		5,990	



### Class V Aircraft: Landing Lengths Required at Airports with Hard Surface Runways

A MINIMUM (M) LENGTH OF 4,850 FEET AT SEA LEVEL TO A DESIRED (D) LENGTH OF 8,000 FEET AT 7,000 FEET PRESSURE ALTITUDE																
D-Desired Landing Lengths/M-Minimum Landing Lengths																
Aircraft this Class	Sea Level		1,000		2,000		3,000		4,000		5,000		6,000		7,000	
	SL-1,000		1,000-2,000		2,000-3,000		3,000-4,000		4,000-5,000		5,000-6,000		6,000-7,000			
	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M
Boeing																
B707-100 Series (C-135A)	6,230	5,340	6,380	5,470	6,520	5,590	6,670	5,720	6,830	5,850	6,970	5,970	7,120	6,100	7,350	6,300
B707-100B Series (C-135B)	6,560	5,620	6,680	5,720	6,820	5,840	6,970	5,970	7,130	6,110	7,290	6,250	7,470	6,400	7,660	6,560
B707-200 Series	6,220	5,330	6,370	5,460	6,510	5,580	6,660	5,710	6,820	5,840	6,950	5,960	7,130	6,110	7,330	6,280
B707-300B Series	6,380	5,470	6,540	5,600	6,690	5,730	6,840	5,860	6,980	5,980	7,130	6,110	7,290	6,250	7,470	6,400
B707-300C Series	6,310	5,410	6,420	5,500	6,540	5,600	6,680	5,720	6,830	5,850	6,990	5,990	7,160	6,140	7,330	6,280
B720 Series	6,230	5,340	6,360	5,450	6,510	5,580	6,680	5,720	6,860	5,880	7,050	6,040	7,240	6,200	7,420	6,360
B720B Series	6,280	5,380	6,410	5,490	6,540	5,600	6,650	5,700	6,780	5,810	6,910	5,920	7,060	6,050	7,210	6,180
British Aerospace																
VC-10	6,380	5,490	6,570	5,650	6,750	5,800	6,940	5,960	7,140	6,130	7,370	6,340	7,590	6,520	7,810	6,720
Super VC-10	6,320	5,430	6,500	5,590	6,690	5,750	6,880	5,920	7,080	6,090	7,300	6,270	7,520	6,460	7,780	6,690
Britannia Series 305	6,100	5,230	6,230	5,340	6,400	5,480	6,580	5,640	6,770	5,800	6,960	5,960	7,150	6,130	7,340	6,390
Britannia Series 312	5,990	5,130	6,160	5,280	6,340	5,430	6,510	5,580	6,690	5,730	6,360	5,880	7,040	6,030	7,200	6,170
British Aerospace/Aerospatiale																
Concorde	6,600	5,660	6,730	5,770	6,890	5,910	7,090	6,080	7,250	6,210	7,450	6,380	7,650	6,560	7,880	6,750
Canadair																
CL-44D4	6,240	5,350	6,380	5,470	6,520	5,590	6,660	5,710	6,800	5,830	6,960	5,960	7,110	6,090	7,270	6,230
Dassault/SUD																
Mystere 20	5,760	4,990	6,090	5,270	6,420	5,550	6,770	5,820	7,090	6,100	7,420	6,360	7,750	6,650	8,080	6,930
Lockheed																
L-1011-1	6,300	5,400	6,430	5,510	6,550	5,620	6,700	5,700	6,850	5,870	7,030	6,030	7,200	6,170	7,380	6,330
L-1011-1-14	6,450	5,530	6,600	5,660	6,750	5,790	6,900	5,920	7,050	6,050	7,250	6,210	7,450	6,390	7,600	6,520
L-1011-1-15	6,600	5,660	6,750	5,790	6,900	5,920	7,080	6,070	7,250	6,220	7,430	6,370	7,600	6,520	7,780	6,670
L-1011-3	6,750	5,790	6,930	5,940	7,100	6,090	7,280	6,240	7,450	6,390	7,630	6,540	7,800	6,690	7,980	6,840
L-1649	6,260	5,360	6,440	5,520	6,580	5,640	6,790	5,820	6,960	5,960	7,180	6,150	7,380	6,320	7,580	6,500
McDonnell/Douglas																
DC-8-61	6,130	5,250	6,290	5,390	6,450	5,530	6,630	5,680	6,800	5,830	7,080	6,065	7,425	6,360	7,770	6,660
DC-8-62	6,000	5,150	6,160	5,280	6,320	5,420	6,490	5,570	6,660	5,710	6,960	5,970	7,250	6,220	7,610	6,530
DC-8-72	6,320	5,420	6,490	5,510	6,650	5,700	6,830	5,860	7,000	6,000	7,320	6,280	7,630	6,540	8,000	6,860
DC-8F-54	6,130	5,250	6,290	5,390	6,450	5,530	6,620	5,670	6,800	5,830	7,050	6,040	7,410	6,350	7,770	6,660
DC-10-10	6,500	5,580	6,680	5,730	6,850	5,870	7,030	6,030	7,200	6,170	7,390	6,340	7,570	6,490	7,790	6,680
DC-10-30 (RC-10A)	6,600	5,660	6,780	5,810	6,950	5,960	7,080	6,070	7,200	6,170	7,450	6,390	7,700	6,600	7,940	6,810
DC-10-40	6,450	5,530	6,600	5,660	6,750	5,790	6,930	5,940	7,100	6,090	7,300	6,260	7,500	6,430	7,700	6,600

A MINIMUM (M) LENGTH OF 4,850 FEET AT SEA LEVEL TO A DESIRED (D) LENGTH OF 8,000 FEET AT 7,000 FEET PRESSURE ALTITUDE																
D-Desired Landing Lengths/M-Minimum Landing Lengths																
Aircraft this Class	Sea Level		1,000		2,000		3,000		4,000		5,000		6,000		7,000	
			SL-1,000		1,000-2,000		2,000-3,000		3,000-4,000		4,000-5,000		5,000-6,000		6,000-7,000	
	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M
Rockwell																
NA-265-40	5,960	5,110	6,170	5,290	6,370	5,460	6,580	5,640	6,780	5,810	7,080	6,070	7,500	6,430	7,940	6,800
Sabreliner 65	5,920	5,080	6,080	5,220	6,270	5,380	6,580	5,640	6,680	5,730	6,920	5,930	7,130	6,110	7,420	6,360
Highest Minimum Landing Length this Class		5,790		5,940		6,090		6,240		6,390		6,540		6,690		6,840

### Class VI Aircraft: Landing Lengths Required at Airports with Hard Surface Runways

A MINIMUM (M) LENGTH OF 5,500 FEET AT SEA LEVEL TO A DESIRED (D) LENGTH OF 10,510 FEET AT 7,000 FEET PRESSURE ALTITUDE																	
D-Desired Landing Lengths/M-Minimum Landing Lengths																	
Aircraft this Class	Sea Level		1,000		2,000		3,000		4,000		5,000		6,000		7,000		
			SL-1,000		1,000-2,000		2,000-3,000		3,000-4,000		4,000-5,000		5,000-6,000		6,000-7,000		
	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	
Aero Commander																	
Jet Commander 1121 and 1121A	6,550	5,600	6,950	5,900	7,350	6,300	7,800	6,680	8,280	7,100	8,850	7,600	9,600	8,200	10,400	8,850	
Airbus Industrie																	
A300B2-20 3	6,670	5,830	6,840	5,870	7,090	6,000	7,170	6,150	7,380	6,330	7,660	6,570	7,930	6,800	8,200	7,030	
A300B4-10 3	6,950	5,960	7,110	6,100	7,280	6,240	7,440	6,380	7,660	6,570	7,930	6,800	8,200	7,040	8,480	7,270	
A300B4-20 3	7,110	6,100	7,280	6,240	7,440	6,380	7,600	6,520	7,820	6,710	8,100	6,950	8,370	7,180	8,640	7,410	
Boeing																	
Q707-100B	8,570	7,350	8,750	7,500	8,930	7,660	9,120	7,820	9,300	7,970	9,500	8,150	9,700	8,320	9,890	8,480	
Q707-300B Advanced	7,080	6,070	7,220	6,190	7,350	6,300	7,550	6,470	7,750	6,650	7,920	6,790	8,080	6,930	8,290	7,110	
B707-300 Series (VC-137)	7,260	6,220	7,420	6,360	7,600	6,510	7,770	6,660	7,940	6,800	8,100	6,940	8,310	7,120	8,530	7,310	
B707-400 Series	7,760	6,650	7,970	6,830	8,170	7,000	8,360	7,160	8,550	7,330	8,750	7,500	8,940	7,660	9,370	8,030	
B747-100 Series	7,840	6,720	8,040	6,890	8,220	7,050	8,420	7,220	8,630	7,400	8,830	7,570	9,050	7,760	9,280	7,960	
B747-200/3 00 Series	8,850	7,590	9,060	7,770	9,280	7,960	9,520	8,160	9,750	8,360	9,990	8,570	10,250	8,790	10,510	9,010	
Canadair																	
CL-600-1A 11	7,050	6,050	7,330	6,290	7,580	6,000	7,800	6,690	8,020	6,880	8,500	7,290	8,880	7,610	9,230	7,910	
CL-600-2A 12	6,880	5,900	7,080	6,070	7,250	6,220	7,550	6,470	7,850	6,730	8,130	6,970	8,430	7,230	8,800	7,550	
Lockheed																	
L-300 (C-141A)	6,650	5,700	6,830	5,850	6,980	5,980	7,140	6,120	7,260	6,220	7,410	6,350	7,610	6,520	7,820	6,700	
L-382 (C-130E)	6,420	5,500	6,650	5,700	6,910	5,920	7,180	6,150	7,410	6,350	7,880	6,750	8,400	7,200	8,980	7,700	
L-500 (C-5A)	7,280	6,240	7,400	6,340	7,600	6,515	7,800	6,685	8,000	6,860	8,200	7,030	8,400	7,200	8,640	7,405	

A MINIMUM (M) LENGTH OF 5,500 FEET AT SEA LEVEL TO A DESIRED (D) LENGTH OF 10,510 FEET AT 7,000 FEET PRESSURE ALTITUDE																	
D-Desired Landing Lengths/M-Minimum Landing Lengths																	
Aircraft this Class	Sea Level		1,000		2,000		3,000		4,000		5,000		6,000		7,000		
			SL-1,000		1,000-2,000		2,000-3,000		3,000-4,000		4,000-5,000		5,000-6,000		6,000-7,000		
	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	
McDonnell/Douglas																	
DC-8-12-2 1-51	6,730	5,770	6,910	5,920	7,080	6,070	7,270	6,230	7,470	6,400	7,740	6,630	8,130	6,970	8,530	7,310	
DC-8-31-3 2-41-52	6,820	5,840	6,990	5,990	7,160	6,140	7,350	6,300	7,550	6,470	7,820	6,700	8,220	7,040	8,610	7,380	
DC-8-33-4 2-43-53	6,960	5,960	7,130	6,110	7,320	6,270	7,500	6,430	7,710	6,610	7,990	6,850	8,380	7,180	8,800	7,540	
DC-8-63	6,530	5,600	6,700	5,750	6,870	5,890	7,060	6,050	7,250	6,220	7,580	6,500	7,900	6,770	8,300	7,120	
DC-8-71	6,920	5,930	7,100	6,090	7,280	6,240	7,480	6,410	7,670	6,580	8,020	6,880	8,360	7,170	8,760	7,510	
DC-8-73	6,850	5,870	7,030	6,030	7,200	6,170	7,400	6,360	7,600	6,520	7,950	6,820	8,290	7,110	8,690	7,450	
Highest Minimum Landing Length this Class		7,590		7,770		7,960		8,160		8,360		8,570		8,790		9,010	

# Chapter 7. ESCORT OF HIJACKED AIRCRAFT

## Section 1. GENERAL

### 7-1-1. PURPOSE

The FAA hijack coordinator (the Director or his designate of the FAA Office of Civil Aviation Security) on duty at Washington headquarters will request the military to provide an escort aircraft for a confirmed hijacked aircraft to:

- a. Assure positive flight following.
- b. Report unusual observances.
- c. Aid search and rescue in the event of an emergency.

### 7-1-2. REQUESTS FOR SERVICE

The escort service will be requested by the FAA hijack coordinator by direct contact with the National Military Command Center (NMCC). Normally, NORAD escort aircraft will take the required action. However, for the purpose of these procedures, the term "escort aircraft" applies to any military aircraft assigned to the escort mission. When the military can provide escort aircraft, the NMCC will advise the FAA hijack coordinator the identification and location of the squadron tasked to provide escort aircraft. NMCC will then authorize direct coordination between FAA and the designated military unit. When a NORAD resource is tasked, FAA will coordinate through the appropriate SOCC/ROCC.

### 7-1-3. HANDLING PRIORITY

When the situation requires an expedited departure of the escort aircraft, the aircraft shall be afforded priority consideration over other departing aircraft.

### 7-1-4. CONTROL RESPONSIBILITIES FOR U.S. AIRSPACE

- a. When hijacked aircraft is within FAA radar coverage, escort aircraft shall be controlled by the appropriate FAA facility.
- b. When a hijacked aircraft is not within FAA radar coverage but within military radar coverage,

escort aircraft may be controlled by the military for the escort phase only.

c. When escort aircraft are under military control, separation between the escort aircraft/hijacked aircraft and other IFR traffic is the responsibility of the FAA. Separation shall be provided through the application of appropriate altitude reservations as required.

d. When escort aircraft is under FAA control, standard air traffic control separation shall be applied. In no case shall any clearance or instruction to the aircraft compromise ATC standards.

e. When tanker aircraft are employed, the designated tankers and escort aircraft shall be under FAA control, and appropriate aerial refueling procedures shall apply.

### 7-1-5. CONTROL RESPONSIBILITIES FOR CANADIAN AIRSPACE

Escort aircraft entering Canadian airspace from the U.S. shall be transferred to NORAD control in accordance with FAA/NORAD procedures prior to the aircraft entering Canadian airspace. Escort aircraft entering U.S. airspace from Canada will be transferred from NORAD control in the same manner when transfer of control is effected. When the hijacked aircraft is not within the coverage of the NORAD surveillance system in Canada, the escort mission will be discontinued.

### 7-1-6. AIR/GROUND COMMUNICATIONS SECURITY

Except when specifically directed otherwise by FAA headquarters, every precaution shall be taken to prevent the hijacker/s from gaining knowledge that an escort is being conducted. When communicating with escort aircraft, ensure that transmissions are made on a different frequency from the one being used to communicate with the hijacked aircraft and are not simultaneously broadcast on a frequency which can be overheard by the hijacked aircraft.

**7-1-7. WEATHER/FLIGHT SAFETY  
LIMITATIONS**

If weather conditions or other flight safety factors make the escort mission impractical, the mission shall be terminated by the controller or the pilot, and the FAA headquarters hijack coordinator shall be advised immediately. The pilot of the escort

aircraft will keep the controller advised of adverse weather or any other hazardous conditions. The pilot will immediately terminate the mission if radio contact with the control facility is lost, maintaining the last assigned altitude and/or radio failure procedures unless the pilot has received specific instructions to the contrary.

## Section 2. ESCORT PROCEDURES

### 7-2-1. FACILITY NOTIFICATION

The FAA hijack coordinator will advise the appropriate center/control tower of the identification of the military unit and location tasked to provide the hijack escort. The center/control tower shall coordinate with the designated NORAD SOCC/ROCC/military unit advising of the hijack aircraft's location, direction of flight, altitude, type aircraft and recommended flight plan to intercept the hijack aircraft. The center/control tower shall file the coordinated flight plan.

### 7-2-2. PILOT NOTIFICATION

a. The control tower, on initial contact with the aircraft, shall inform the pilot of the nature of the mission.

**EXAMPLE-**

*"Red dog five, this is a hijack escort mission."*

b. If the aircraft is an air defense or tactical aircraft, the controller shall also request the pilot to complete an armament safety check.

**EXAMPLE-**

*"Perform armament safety check."*

### 7-2-3. VECTORS

Escort aircraft shall be vectored to a position 5 miles directly behind the hijacked aircraft. The vectors shall be planned to approach the hijacked aircraft from the rear to avoid the possibility of being observed and to position the escort aircraft at the same altitude, speed, and heading as the hijacked aircraft.

### 7-2-4. RADAR REQUIREMENTS

Normally, radar contact with both aircraft is required. However, if the pilot of the escort aircraft has the hijacked aircraft in visual contact, the mission may continue without radar contact.

### 7-2-5. AIRPORT LIMITATIONS

When the hijacked aircraft descends for the purpose of landing at an airport within the continental U.S., the escort aircraft will not follow the hijacked aircraft into airspace delegated to an approach control facility. The FAA facility controlling the

aircraft or within whose airspace the aircraft is operating shall issue instructions to the pilot or to the military control facility for the aircraft to hold at a specified altitude and location and wait for further instructions.

### 7-2-6. RESPONSIBILITIES PRIOR TO JOIN-UP

Until the escort aircraft has joined-up with the hijacked aircraft, the pilot shall be kept informed of the hijacked aircraft heading, speed, altitude, and destination (if known); also, its range and position relative to the escort aircraft. For fighter/interceptor aircraft, the application of "optimum cruise" will normally ensure sufficient overtake during the "join-up" phase. Assign an altitude which is either the altitude of the hijacked aircraft or the optimum altitude requested by the escort aircraft pilot when the hijacked aircraft is at a lower altitude. Descend the escort aircraft to the altitude of the hijacked aircraft prior to reaching a point 30 miles from the target. When the hijacked aircraft is at a low altitude where communications between the escort aircraft and the control facility would be questionable, a second escort aircraft (which will normally be available when NORAD interceptors are being utilized) may be stationed at a higher altitude near the hijacked aircraft's position for relay of information between the control facility and the escort aircraft maintaining visual surveillance.

### 7-2-7. POSITIONING INSTRUCTIONS

Unless the escort pilot has a visual contact, plan the join-up at 30 miles and issue positioning instructions.

**EXAMPLE-**

*"Echo Golf One Two, when contact is established, maintain surveillance. Approach no closer than five miles directly behind. Remain out of sight from cockpit or cabin, and report all actions observed."*

**NOTE-**

*The pilot will advise you when the hijacked aircraft has been acquired on airborne radar (if his aircraft is so equipped) and when visual contact has been achieved.*

**7-2-8. TERMINATION HEADING**

When terminating the escort for purposes of recovery, repositioning, refueling, etc., issue a

heading of at least 90 degrees from the hijacked aircraft's heading.



## **Section 3. REPLACEMENT/RECOVERY OF ESCORT AIRCRAFT**

### **7-3-1. REPLACEMENT RESPONSIBILITIES**

Replacement of escort aircraft which must be recovered prior to hijack mission termination will be accomplished automatically by the military. To aid the military in planning for replacement aircraft and recovery airfields, "fuel state" shall be obtained from the pilot and relayed as requested. Replacement aircraft, if available, will be dispatched to assume the airborne escort role prior to the initiation of recovery procedures. When the escort aircraft is being controlled by an ARTCC/CERAP and replacement requirements are made known, the ARTCC/CERAP controlling the aircraft shall coordinate the replacement with the applicable NORAD Region/SOCC/ROCC as required. The hijack coordinator will be advised of replacement actions.

### **7-3-2. RECOVERY RESPONSIBILITIES**

Recovery requirements and the selection of the

recovery field is the responsibility of the military command. The hijack coordinator will advise the ARTCC/CERAP controlling the escort when the escort is to be terminated. The facility will coordinate the recovery with the NORAD Region/SOCC/ROCC. The ARTCC/CERAP will relay to the pilot recovery decisions received from the NORAD Region/SOCC/ROCC; i.e., recovery base, base weather, and frequently inform the pilot of his position in relation to the selected recovery field.

### **7-3-3. RETURN-TO-BASE**

Return-to-base shall be accomplished under FAA control. Escort aircraft under military control when the escort mission is terminated will be transferred to FAA control as soon as practicable.

### **7-3-4. REFUELING OPERATIONS**

When refueling operations are conducted, the procedures in Chapter 10 shall apply.

## Section 4. FORWARDING INFORMATION

### 7-4-1. FAA HEADQUARTERS REQUIREMENTS

FAA facilities shall respond to directions issued by the FAA hijack coordinator concerning hijack incidents and keep Emergency Operations Staff (ADA-20) informed of the progress of the escort missions. ADA-20 will establish communications conferencing as required.

### 7-4-2. POSITION REPORTS WITHIN NORAD RADAR COVERAGE

When the hijacking activity is within coverage of the NORAD surveillance system, position reports will be forwarded to the Cheyenne Mountain AFB/Air Defense Operations Center (CMAFB/ADOC) by NORAD units. To facilitate NORAD tracking, every attempt shall be made to ensure that the hijacked aircraft is squawking Mode 3/A, code 7500. The NORAD control facility shall be advised if the hijacked aircraft is squawking a different transponder code. The NORAD control facility will also be advised of the Mode 3/A code setting assigned to hijack escort aircraft when other than NORAD interceptor aircraft are being employed. This would assist NORAD control facilities in monitoring the ongoing situation when non-NORAD resources are used.

### 7-4-3. POSITION REPORTS OUTSIDE NORAD RADAR COVERAGE

When the hijacking activity takes place outside NORAD radar coverage within the continental

United States, the ARTCC/CERAP controlling the activity shall forward position reports to the appropriate NORAD/SOCC/ROCC Senior Director. The position reports shall be forwarded as follows:

a. The initial report from the ARTCC/CERAP to the NORAD/SOCC/ROCC Senior Director shall include the following:

1. Call sign of the hijacked aircraft.
2. Time (UTC).
3. Position in latitude and longitude.
4. Heading.
5. Speed.
6. Altitude.
7. Position of escort aircraft with respect to hijacked aircraft, if requested.

#### EXAMPLE-

*"Universal Four Thirty-one, one seven three zero zulu, position, 34°26'N - 81°03'W, heading one seven five, true airspeed four eight zero knots, flight level three seven zero."*

b. Subsequent reports shall include all of the items in subparagraph a, above, except that items 4, 5, and 6 shall only be reported if different from the initial information.

c. When control of the hijacked aircraft is transferred to another ARTCC/CERAP, the transferring facility shall notify the ATCSCC.

## **Section 5. MISSION TERMINATION**

### **7-5-1. TERMINATION AUTHORITY**

The escort mission may be terminated by FAA headquarters, the National Military Command Center, or major military command authority. Termination of the mission shall be relayed to the escort aircraft by the controlling facility.

### **7-5-2. OVERFLIGHT CLEARANCE**

Escort aircraft shall not be cleared to overfly

boundaries of foreign countries other than Canada without overflight approval. The appropriate air traffic control facility will be informed of overflight approval prior to the hijacked aircraft exiting U.S. airspace. When the escort aircraft is being controlled by an FAA facility, overflight approval will be received through the FAA hijack coordinator. The pilot shall be informed of the overflight approval upon receipt.

## Chapter 8. ANTIDRUG OPERATIONS

### Section 1. GENERAL

#### 8-1-1. PURPOSE

NORAD is tasked to detect and surveil suspect drug smuggling aircraft until an appropriate law enforcement agency assumes responsibility.

#### 8-1-2. REQUESTS FOR SERVICE

NORAD will respond to unidentified and/or suspicious air activity penetrating or operating within the ADIZ. NORAD will also respond to requests from U. S. Customs Service and/or other appropriate law enforcement agencies for airborne surveillance of suspect drug smuggling aircraft in the ADIZ and/or overland with FAA concurrence and support.

#### 8-1-3. HANDLING PRIORITY

a. Priority and special handling will be afforded aircraft participating in drug interdiction missions to the extent that this priority does not derogate safety.

b. The FAA Authorization For Interceptor Operations (AFIO) shall not be invoked.

#### 8-1-4. RESPONSIBILITIES

The Air Defense Control Facility (ADCF) shall be responsible for providing position information on the suspect aircraft to the ARTCC/CERAP, who will initiate tracking to facilitate mission accomplishment. Where no direct communications circuits exist between the ADCF and a terminal ATC facility, the ARTCC/CERAP shall provide a point out to the terminal controller when requested by the ADCF.

##### a. International Airspace-

When the suspect aircraft is in international airspace, ATC will control the departure phase of the mission and, when clear of IFR traffic, release control of the surveillance aircraft to the appropriate ADCF. The ADCF will control the aircraft during the intercept and surveillance phase of the anti-drug mission while in international airspace.

##### b. Domestic Airspace-

1. When the suspect aircraft is within domestic airspace, the ATC facility will control the surveillance aircraft during all phases of the mission. If ATC cannot provide IFR services requested by the surveillance aircraft, for any reason, the controller shall inform the pilot and, if appropriate, offer an amended clearance. The pilot may elect to remain within the ATC system and accept an amended clearance, cancel IFR and proceed under visual flight rules, or terminate the surveillance mission and return to base.

2. When tanker aircraft are employed, they shall be under ATC control. During refueling operations, appropriate aerial refueling procedures shall apply and both the surveillance aircraft and the tanker shall be under ATC control or within pre-coordinated airspace under military control.

3. When the surveillance aircraft is under ATC control, standard air traffic control separation shall be applied. In no case shall any clearance or instruction to the aircraft compromise minimum ATC standards.

##### c. Canadian Airspace-

Surveillance aircraft entering Canadian airspace from the United States shall be transferred to NORAD control in accordance with FAA/NORAD procedures prior to the aircraft entering Canadian airspace. Surveillance aircraft entering the United States airspace from Canada will be transferred from NORAD control in the same manner when transfer of control is effected. When the suspect aircraft is not within the radar coverage of the NORAD system in Canada, the surveillance mission will be discontinued.

#### 8-1-5. SPECIAL AIRSPACE REQUIREMENTS

a. When NORAD is required to conduct surveillance of a suspected drug smuggling aircraft within domestic airspace, special operating airspace and procedures must be employed to assure mission objectives. Controllers, both FAA and military, must be aware of this unique requirement.

1. Normally, two fighter aircraft will be used by NORAD for surveillance operations. Replacement aircraft may be required for missions of long duration.

2. When the surveillance aircraft establishes contact with the suspect aircraft, the pilot will notify ATC of the initial course to be flown to accomplish the surveillance mission. Changes to this course or the assigned altitude will not be made without ATC clearance.

**NOTE-**

*The course to be flown by surveillance aircraft is dictated by the course being flown by the suspect aircraft. Request for changes in course by the surveillance aircraft can be anticipated when the course changes are made by the suspect aircraft.*

3. When the suspect aircraft is operating at a speed of less than 250 knots, fighters may need to maneuver in order to remain behind the suspect aircraft and to maintain continuous radar and/or visual surveillance of the suspect. The maneuver must be requested by the pilot and approved by ATC.

(a) Examples of these maneuvers include, but are not limited to, a left or right hand race track pattern and/or weaving maneuvers behind the suspect aircraft.

(1) A left hand or right hand race track pattern requires a 2000 foot block of airspace and is flown with the off-course fighter descending to 1,000 feet below the altitude of the on-course fighter and proceeding to a position so as to be re-established inbound, on-course, within 20 nautical miles (NM) of the lead aircraft. The lateral airspace limits required to contain the left or right hand race track pattern will normally be approximately 5 miles either side of the track center line.

(2) A weaving maneuver is flown in a lead-trail formation with 2 NM between the lead surveillance aircraft and his wingman. The lateral airspace required to contain this maneuver will normally be 2 NM either side of the track centerline.

4. When two or more DOD aircraft are used in the surveillance mission, the military assumes

responsibility for separation of DOD aircraft (MARSA) participating in that mission.

#### **8-1-6. AIR/GROUND COMMUNICATIONS SECURITY**

Except when air safety is the primary consideration, every precaution shall be taken to prevent the suspect aircraft from gaining knowledge that a surveillance mission is being conducted. ATC shall use discrete UHF frequencies whenever possible for communication with the surveillance aircraft and shall not simultaneously broadcast drug surveillance information on VHF frequencies where equipment configuration will permit independent UHF frequency operations.

#### **8-1-7. WEATHER/FLIGHT SAFETY LIMITATIONS**

If weather conditions or flight safety factors make the surveillance mission impractical, the mission may be terminated by the pilot, and the appropriate ADCF shall be advised immediately.

#### **8-1-8. TWO-WAY RADIO COMMUNICATIONS FAILURE**

a. Unless otherwise specified by ATC or the pilot, the IFR clearance limit for aircraft engaged in counter-drug surveillance missions shall be the base of departure. Since the return route of flight to the base of departure will normally not be known and, in some instances, fuel considerations may prohibit return to base of departure, ATC will consider surveillance aircraft with two-way radio communications failure as an emergency and afford appropriate priority.

b. In the event of two-way communications failure, the surveillance aircraft pilot shall set the mode 3/A transponder code 7700. If in visual meteorological conditions (VMC), proceed VFR to landing, or if in instrument meteorological conditions (IMC), maintain last assigned altitude/flight level/minimum altitude/flight level for the route segment being flown, proceed to the base of departure, and land.

## **Section 2. DEPARTURE PROCEDURES**

### **8-2-1. FACILITY NOTIFICATION**

The NORAD Sector Operations Control Center (SOCC) initiating a scramble/airborne order for a drug interdiction mission shall notify the appropriate ATC facility as early as possible and file an IFR flight plan stating that the flight is an counter-drug surveillance mission. The ATC controller entering the flight plan into the ATC system shall insert the appropriate FAA Order 7110.67 code word as the

first entry in the remarks section of the flight plan or transmit it verbally during coordination between ATC facilities or controllers and between ATC facilities and NORAD facilities to insure proper identification of drug interdiction missions. Pilots/controllers may use the code word in air/ground communications when the situation warrants, but generally should avoid using this code word to prevent compromising the mission.

## **Section 3. SURVEILLANCE PROCEDURES**

### **8-3-1. INTERCEPT RESPONSIBILITY AND POSITIONING INSTRUCTIONS**

a. ATC is not responsible for conducting intercepts. However, ATC should assist the pilot in attaining a position where the surveillance aircraft can acquire the suspect aircraft on airborne radar or visual contact that will permit the pilot to accomplish the intercept.

b. Upon pilot request, the controller shall provide target heading, relative range, bearing and altitude information, if known, of the suspect aircraft.

c. The pilot will advise ATC when the suspect aircraft has been acquired on airborne radar (if his aircraft is so equipped) and/or when visual contact has been achieved. Further positioning instructions are not required.

### **8-3-2. ATC CLEARANCE REQUIREMENTS**

a. Surveillance aircraft should be routed or vectored to a position approximately 10 miles directly behind the suspect aircraft to avoid the possibility of being observed.

b. At 30 nautical miles, the pilot normally will request an altitude acceptable for the surveillance mission. Fighter aircraft should be positioned within 5,000 feet of the suspect aircraft's known altitude, preferably above, but may be any altitude requested by the pilot.

c. When the suspect aircraft is at a low altitude where communications between the surveillance aircraft and the control facility may be questionable, a higher altitude may be assigned with a greater distance in-trail provided for the surveillance aircraft.

### **8-3-3. RADAR REQUIREMENTS**

Surveillance aircraft must be in radar contact at all times. However, when the pilot of the surveillance aircraft has the suspect aircraft in visual or radar contact, the mission may continue without ATC radar contact of the suspect aircraft.

### **8-3-4. TERMINATION HEADING**

When terminating the surveillance mission for purposes of recovery, repositioning, refueling, etc., issue a heading of at least 90 degrees from the suspect aircraft's heading.

## **Section 4. REPLACEMENT/RECOVERY OF AIRCRAFT**

### **8-4-1. REPLACEMENT RESPONSIBILITIES**

The military is responsible for determining requirements to replace surveillance aircraft which must recover prior to termination of the mission. When requested by the military, ATC shall obtain fuel states from the pilot and relay them to the appropriate ADCF. Replacement aircraft, if available, will be dispatched to assume the airborne surveillance mission prior to the initiation of recovery procedures. If the surveillance aircraft is being controlled by the ATC when replacement requirements are made known, the ADCF shall coordinate replacement with the appropriate ATC facility.

### **8-4-2. RECOVERY RESPONSIBILITIES**

Recovery requirements and the selection of the

recovery field is the responsibility of the military. ATC shall relay recovery decisions received from the military command, relay weather conditions, and inform the pilot of his position in relation to the selected recovery field.

### **8-4-3. RETURN-TO-BASE (RTB)**

RTB will be accomplished under ATC control. Surveillance aircraft under ADCF control when the surveillance mission is terminated will be transferred to ATC control as soon as practical. RTB may be accomplished under VFR.

### **8-4-4. REFUELING OPERATIONS**

When refueling operations are conducted, the procedures in Chapter 10 shall apply.



## **Section 5. FORWARDING INFORMATION**

### **8-5-1. POSITION REPORTING REQUIREMENTS**

a. When the suspect aircraft is within coverage of the NORAD surveillance system, position reports are not required unless specifically requested by NORAD.

b. When the surveillance mission is within the

National Airspace System, but outside the coverage of the NORAD surveillance system, the ATC facility controlling the activity will make position reports to the appropriate NORAD facility, as requested. This will assist NORAD in monitoring the ongoing situation and in making necessary command and control decisions appropriate to the mission in progress.

# Chapter 9. MILITARY OPERATIONS REQUIREMENTS

## Section 1. CRITERIA

### 9-1-1. PURPOSE

This chapter prescribes policy, criteria, administrative and operating procedures pertaining to airspace for military operations/training activities during planned exercises and daily training missions/research, development, test and evaluation (RDT&E).

### 9-1-2. POLICY

The FAA recognizes that the military has a continuing requirement to conduct certain training and RDT&E activities within airspace as free from other aircraft as is practicable. Therefore, certain special military training and/or RDT&E operations shall be conducted within ATC assigned airspace (ATCAA), Altitude Reservation (ALTRV), military operations areas (MOA), restricted areas, warning areas, and IFR military training routes (IR) so that these activities are separated from other IFR traffic in controlled airspace. Flights to/from such areas shall be under the control of either FAA or military ATC facilities to the maximum extent possible. The policies and procedures for designating special use airspace (SUA) are contained in FAA Order 7400.2, Procedures for Handling Airspace Matters.

### 9-1-3. AIRSPACE DESCRIPTION

Airspace utilized for military operations shall be described in terms of lateral and vertical dimensions and specific times of use. In developing the dimensions and times of use for SUA and ATCAA descriptions, apply the criteria contained in Chapter 27, Section 2, of FAA Order 7400.2.

### 9-1-4. LIMITATIONS

a. The designation of SUA or ATCAA shall be limited to the minimum number of areas necessary to support operational requirements.

b. To the extent possible, the area shall be designed so as to accommodate the maximum number of different types of military activities in the same airspace area. The military shall provide procedures for joint-use scheduling in an area.

c. To facilitate joint-use of SUA/ATCAA, activation shall be limited to the minimum area, altitude, and time required for the activity/mission.

### 9-1-5. LETTERS OF AGREEMENT/PROCEDURE

a. Letters of agreement/procedure governing SUA shall include as a minimum:

1. Scheduling procedures and positive updating, to include requirement and time parameters for providing these updates to the schedule.

2. Activation/deactivation procedures.

3. Activation/deactivation times.

b. The letters of agreement/procedure governing special conditions of use and procedures for each SUA and ATCAA areas shall be authorized (signed) by the affected ATC facility manager and the military representative of the originating/scheduling activity.

c. Each SUA/ATCAA area will have a designated military office responsible for scheduling all military activities within that area. Areas shall not be used for military activities unless scheduled by the responsible military office.

d. When the use of SUA/ATCAA has been requested in accordance with agreed upon procedures, the military scheduling unit is responsible for determining priority of use and for advising all users of the operational procedures restrictions or other conditions contained in the letters of agreement/procedure.

## Section 2. ATCAA AND MOA PROCEDURES

### 9-2-1. REQUIREMENT

a. Each ATCAA/MOA shall have a designated military unit responsible for scheduling all military flights intending to use the airspace. If the designated military unit does not have a continuous point of contact; i.e., a unit subject to deployment or a unit not available during normal work days (Air National Guard unit working Wednesday through Sunday), then an alternate scheduling agency will be designated. ATCAA/MOA's shall not be used for military training/RDT&E unless scheduled by the scheduling agency.

b. Procedures governing operations within ATCAA's and MOA's shall be specified in letters of agreement authorized (signed) by the controlling facility Air Traffic manager, and the military representative of the originating/scheduling agency (primary or alternate). The alternate scheduling agency will have the same responsibilities as the primary scheduling agency. Procedures shall be developed to ensure continuity of scheduling functions so that the primary and alternate scheduling agencies do not schedule airspace simultaneously.

### 9-2-2. USING AGENCY RESPONSIBILITIES

When the use of an ATCAA/MOA has been requested, as specified in the letter of agreement, the using agency shall:

a. Determine priority of use and advise all users of the pertinent procedures contained in the letter of agreement.

b. Establish a real-time activity schedule indicating airspace use times and forward the schedule and any subsequent changes to the controlling agency.

c. Develop procedures with the military using units to ensure that they inform the scheduling agency, as soon as possible, of any periods of nonuse (1 hour or longer) after the initial schedule has been established.

### NOTE-

*Efficient management of ATCAA/MOA's requires that activity schedules reflect the real-time use of the airspace. After the initial activity schedule has been coordinated and established, maintenance problems, weather conditions, etc., can cause military using units to cancel previously scheduled missions. To provide the FAA and the civil airspace users with actual (real-time) ATCAA/MOA activity schedules it is essential that the military using units inform the scheduling agency of those unscheduled periods of nonuse so that the information can be disseminated to all interested parties.*

### 9-2-3. CONTROLLING AGENCY RESPONSIBILITY

The controlling agency (normally an ARTCC), shall forward the MOA activity schedule for other than published times to all FSS's whose flight plan area is located within 100 NM of the MOA perimeter. Operational requirements may necessitate notifying FSS's beyond the 100 NM perimeter. The MOA activity schedule for other than published use times shall be forwarded at least 2 hours prior to the beginning of the planned activity.

### 9-2-4. ATC CONTROL WITHIN ATCAA'S AND MOA'S

ATCAA's and MOA's may be controlled by an ATC facility. Every effort should be made to provide IFR service within these areas when requested by the military:

a. When IFR service is provided by the ATC facility within the area, the separation within the area is the responsibility of the ATC facility unless MARSA is established in accordance with paragraph 1-4-8.

b. The pilot when cleared into the area is responsible for remaining within the area, whether VFR or IFR; however, the ATC facility should assist the pilot when the aircraft is under its control.

### 9-2-5. NON-RADAR AND COMMUNICATIONS

ATCAA's and MOA's may be established in airspace where radar and/or direct communication is not available. Procedures concerning these areas shall be specified in a letter of agreement.

## **Section 3. AIRCRAFT ARRESTING SYSTEM, SINGLE FREQUENCY APPROACH (SFA), SIMULATED FLAMEOUT (SFO), CELESTIAL NAVIGATION (CELNAV) TRAINING**

### **9-3-1. OPERATION OF AIRCRAFT ARRESTING SYSTEMS**

These instructions are applicable only at joint-use FAA locations which employ the USAF web barrier and hook cable arresting systems. Normally, the barriers will be maintained in the down position. However, at those locations where appropriate local military authority determines that the barrier/cable must be maintained in a raised position due to existing or forecasted freezing weather conditions or temporary malfunctioning of the activating mechanism, the FAA facility shall:

a. Issue a Notice to Airmen (NOTAM) advising that the barriers/cable is in the raised position. This is in addition to the military outage NOTAM required by barrier agreement and appropriate Air Force Instructions, but they may be combined where feasible.

b. Notify the appropriate Flight Standards District Office (FSDO).

### **9-3-2. ARRESTING SYSTEMS CONTROL PANELS**

FAA requires that the USAF provide adequate lights and controls in the tower cab at all locations with installed barriers/cables. The following minimum requirements have been established with regard to tower cab barrier control panels:

a. Switches or control buttons shall be safely covered to prevent accidental activation.

b. The arresting system position lights installed in the tower shall be of sufficient intensity to be seen in full daylight and shall give positive indication of barrier/cable position "up" or "down" and not just that power has been applied to the erecting mechanism. Lack of power indication shall be considered a malfunctioning of the system, and the control of aircraft shall be conducted in accordance with raised arresting system instructions contained herein.

### **9-3-3. ACTION REQUIRED BY FACILITY AIR TRAFFIC MANAGER**

The following action is required by the facility Air Traffic manager:

a. A letter of agreement for the operation of aircraft arresting systems shall be drafted and approved by the FAA regional office and the appropriate military commander. This agreement is not effective until such time as the facility air traffic manager is advised in writing by the military commander that the arresting system is available as specified in the letter of agreement.

b. Operational agreements for aircraft arresting systems are not restricted to, but must include, the following information:

1. This agreement shall become effective when the FAA facility air traffic manager receives notice in writing from the base commander that:

(a) The barrier/cable has been accepted from the contractor and is commissioned and fully operational; or

(b) The barrier/cable is available on a limited basis for emergency use. In the event the barrier/cable has not been accepted from the contractor, this notification must be accompanied by a written statement from the contractor authorizing the emergency use of the barrier/cable and waiving any claim against the FAA for damage to the arresting system as the result of such use.

(c) A Notice to Airmen has been issued specifying conditions in (a) and (b).

c. Prior to the receipt of the foregoing letter from the base commander, the tower arresting system controls shall be de-energized by the military and placarded "INOPERATIVE" by the chief controller and shall not be activated by tower personnel under any circumstances.

d. During unscheduled outages due to failure of tower controls or control lines to the facility or upon notification by tower personnel of a malfunction of the barrier/cable mechanism or remote control system and if the military desires the arresting

system to be raised and lowered, the military crew at the barrier/cable site shall have full and final responsibility for operating the arresting system. The arresting system crew shall maintain a listening watch on appropriate air/ground frequencies and have transmit/receive capability with the tower on the ground control frequency in order to keep tower personnel informed of the position of the arresting system.

e. To eliminate a requirement for the pilot to change from the controlling agency frequency where ground controlled intercept/ground controlled approach (GCI/GCA) hand-offs are employed, the tower shall operate the arresting system at the request of the GCA unit. Where an approach control facility releases aircraft to a GCA unit, the tower at the airport of destination shall operate the arresting system at the request of the approach control unit or the GCA unit at the destination airport.

f. If malfunctioning of the barrier/cable mechanism or remote control system occurs, tower personnel shall notify base operations immediately.

#### **9-3-4. PUBLICATION OF INSTALLATION**

The local military authority will initiate action to notify the National Flight Data Center (NFDC) and the St. Louis Air Force Station, Missouri 63118 of the original commissioning. Subsequently, this information will be published in the National Flight Data Digest and the Flight Information Publication Supplement.

#### **9-3-5. LIABILITY AGREEMENTS FOR ARRESTING SYSTEMS**

Liability agreements between the Air Force and the FAA at each joint-use civil airport where an airport arresting system device is installed are not required. Since the FAA acts for and on behalf of the Air Force in operating the equipment for military aircraft, the Air Force has assumed responsibility for any claim resulting from such operation by the FAA or from the Air Force or the Air National Guard maintenance of the system. Liability for any damage arising from the operation of the system by the FAA for civil aircraft is the responsibility of the FAA.

#### **9-3-6. SINGLE FREQUENCY APPROACH (SFA)**

When SFA procedures are implemented by terminal facilities providing radar approach control service to airports where military single-piloted turbojet aircraft are regularly based, ensure that the following conditions are met:

- a. Communications capability will meet normal demands without increasing aircraft delays.
- b. At least five discrete UHF frequencies are available for this use.
- c. The radar approach controller retains jurisdiction over the rotation of three frequencies between himself and the GCA controller.
- d. A letter of agreement is consummated by the FAA facility Air Traffic manager with local military authorities covering ATC procedures, use of frequencies, etc.

#### **9-3-7. SIMULATED FLAME-OUT (SFO) OPERATIONS**

At locations where SFO maneuvers are conducted, the facility air traffic manager shall issue a letter of agreement with the appropriate military authority and adjacent facilities as required. The letter of agreement shall include at least the following issues:

- a. A complete description of the flame-out procedure. (High-key altitude MSL, airspeed during procedure, direction of turns, and low-key altitude MSL will be obtained from the military for all types of aircraft planning to utilize this procedure. The flame-out maneuvering airspace area should be visible from the normal local control position in the control tower.)
- b. The weather conditions that must exist before issuance of approval by the tower. (Ceiling must be at least 1,000 feet above the approved high-key altitude, and flight and ground visibility must be reported to be at least 5 miles.)
- c. A statement to the effect that a practice flame out may be disapproved because of traffic or other reasons either before or after the start of the maneuver.
- d. A statement that flame-out practice will be approved only between sunrise and sunset.

e. A statement indicating that provision of this service by the tower does not in any way absolve the pilot from his responsibility to comply with 14 CFR parts 91.111 and 91.113, other appropriate subparts of 14 CFR part 91, and/or applicable military regulations.

f. Pilots utilizing simulated flame-out procedures in U-2 and TR-1 aircraft are authorized to deviate from the weather conditions prescribed in subparagraph b as follows:

1. Ceiling must be at least 500 feet above the approved high-key altitude; and

2. Flight and ground visibility must be reported to be at least 3 miles.

**NOTE-**

*Flame-out procedures conducted above 10,000 feet MSL shall be in accordance with 14 CFR part 91.155.*

**9-3-8. CELESTIAL NAVIGATION (CELNAV) TRAINING**

a. Within conterminous U.S., CELNAV training is restricted to transponder-equipped aircraft within areas of ARTCC radar coverage.

b. Because CELNAV training procedures require a pilot to deviate from the course requirements of 14 CFR 91.181, pilots shall obtain ATC approval before discontinuing conventional navigation to begin CELNAV training.

c. Pilots are also required to advise ATC when discontinuing CELNAV training and resuming conventional navigation.

d. Pilots engaged in CELNAV training shall advise ATC before initiating any heading change of more than 20 degrees.

e. Pilots shall remain within 30 NM of the assigned course unless otherwise authorized by ATC.

f. ATC approves flight plans specifying CELNAV only when requested for USAF or USN aircraft.

# Chapter 10. AERIAL REFUELING

## Section 1. GENERAL

### 10-1-1. PURPOSE

This chapter sets forth policy and criteria for the establishment of aerial refueling tracks and anchors and the air traffic control aspects of refueling operations. Administrative guidelines are also provided concerning the design, development, coordination, and publication of aerial refueling tracks and anchors on a global basis. Effective utilization of this information will permit aerial refueling to be conducted with a minimum of planning and will ensure maximum utilization of airspace. Refueling tracks/anchors are published in DOD FLIP and have been established for universal use by all military services.

### 10-1-2. OBJECTIVE

Approved FAA/U.S. military ATC procedures and separation standards will apply between military aerial refueling operations and other airspace users. In order to provide for the safe and efficient conduct of refueling operations, aerial refueling tracks/anchors will be planned to have a minimal impact on the air traffic system and still satisfy user needs.

#### **NOTE-**

*Approval of an aerial refueling track/anchor shall not preclude ATC from using such airspace after the completion of the rendezvous, provided that separation is applied in accordance with FAA Order 7110.65 between nonparticipating aircraft and participating aircraft within the aerial refueling track/anchor.*

### 10-1-3. RESPONSIBILITY

The U.S. military services have agreed, to the maximum extent possible, aerial refueling will be conducted on existing published tracks/anchor tracks and to conduct aerial refueling operations in accordance with the provisions of this chapter which provides standard guidance for all user commands involved in refueling operations.

### 10-1-4. SEPARATION

Standard separation (in accordance with FAA Order 7110.65) will be applied to aerial refueling aircraft.

### 10-1-5. DEVIATIONS

FAA regional air traffic division managers (theater commanders in areas not under FAA jurisdiction) may authorize deviations from provisions of this chapter when military requirements cannot be supported within the established standards. Approved deviations shall be fully coordinated and should contain provisions to ensure a level of safety equivalent to standards set forth in this chapter.

#### **NOTE-**

*Theater commanders must comply with host nation requirements.*

### 10-1-6. CHRONOLOGY

The following is a basic chronology of the events for a typical air refueling operation in tracks and anchors. The exact sequence may vary as dictated by operational circumstances. For air refueling tracks, the en route rendezvous differs from the point-parallel rendezvous (see 10-5-4a, 5(a)) only in that the tanker does not delay at the air refueling control point (ARCP) and both tanker and receiver aircraft enter the aerial refueling airspace simultaneously.

#### a. Aerial Refueling Track.

#### **NOTE-**

*Normally, the tanker aircraft enters the track at the ARCP, and the receiver aircraft enters at the air refueling initial point (ARIP).*

1. Tanker requests delay at the ARCP and advises ATC of the requested aerial refueling block altitudes.

2. ATC approves delay and issues clearance, or advises tanker to expect clearance, for the air refueling block.

#### **NOTE-**

*If the delay is approved, the aircraft will enter the refueling pattern. If a hold is issued, aircraft will enter a standard holding pattern or as assigned by ATC.*

3. Tanker enters orbit pattern airspace for delay at ARCP.

**NOTE-**

*If no clearance is received, aircraft will hold in the direction of the air refueling pattern until their filed air refueling control time (ARCT). If no clearance is received by the ARCT, the aircraft will proceed down the AR track on its flight plan route; refueling is not authorized.*

4. Receivers are cleared to requested altitude and IFR separation is established prior to ARIP and release to tanker communication rendezvous (C/R) frequency.

5. Tanker declares MARSA.

6. ATC releases receiver to tanker C/R frequency not later than the ARIP.

7. ATC issues clearance to conduct aerial refueling along the track, and issues block altitude clearance, if not previously accomplished.

8. ATC shall ensure that non-participating aircraft remain clear of the area until the rendezvous is complete.

9. Tanker and receiver aircraft complete rendezvous and proceed down track. During aerial refueling, the tanker is responsible for receiver

aircraft navigation along the track and for all tanker/receiver communications with ATC.

10. Tanker advises ATC of tanker and receiver end aerial refueling altitude requests at least five (5) minutes prior to exit.

11. At or prior to the exit point, ATC issues tanker and receiver altitude clearances, transponder codes, and if requested, amended routing.

12. Prior to exit, tanker vertically positions the aircraft in the formation within the air refueling airspace to facilitate breakup at the exit point (normally, tanker at highest altitude of aerial refueling block and receiver at lowest altitude).

13. MARSA is terminated when standard ATC separation is established and ATC advises MARSA is terminated.

**b. Anchor Aerial Refueling.**

1. Anchor aerial refueling operations involve the same basic procedural elements as required for track refueling, except that both tanker and receiver aircraft file a delay in the anchor area and all air refueling activity is conducted within the anchor as per paragraph 10-3-2.

2. Additional requirements, such as, alternate entry/exit points, MRU procedures, etc., shall be specified in a letter of agreement, as required.



## Section 2. TRACK REQUIREMENTS

### 10-2-1. DESCRIPTION

a. Aerial refueling tracks are established to accommodate refueling operations along a prescribed route. An aerial refueling track consists of an ARIP, ARCP, and an exit point. Navigation check points between the ARCP and exit point are specified, as required, to facilitate navigation along the route. It also includes the tanker orbit pattern at the ARCP, and the altitude block(s) assigned for the track.

b. Instructions for preparing and submitting track proposals are contained in Section 4 of this chapter.

### 10-2-2. NAVIGATION ALONG AIR REFUELING TRACK

Navigation along an aerial refueling track shall be accomplished using a combination of airborne equipment and NAVAID's as appropriate.

#### NOTE-

*Whatever the method of navigation, participating aircraft shall be expected to adhere to the course centerline during aerial refueling operations unless deviations within/beyond the track are specifically approved by the ARTCC/CERAP, or are authorized in a procedural letter of agreement with the controlling agency.*

### 10-2-3. ARIP ESTABLISHMENTS

The ARIP shall be established:

a. At a distance from the ARCP which shall meet the requirements of the primary user command.

b. Within 30 degrees either side of the extended centerline of the track on which the actual air refueling operation is to be accomplished.

c. Within the same ARTCC/CERAP area as the ARCP whenever practical.

d. So as to provide for a direct course between the ARIP and ARCP.

### 10-2-4. DEGREE-DISTANCE TRACK DEFINITION

a. Tracks predicated on degree-distance track definition shall provide:

1. A means of navigation from the ARIP to the exit point via a usable NAVAID radial/distance or along offshore extended routes.

2. A means of navigation from at least one navigational checkpoint or from the exit point to proceed IFR en route via a usable NAVAID.

b. Tracks located over water or in remote areas or beyond the range of fixed NAVAID's shall be predicated on geographical coordinate route definition with suitable navigation means provided by the user command.

### 10-2-5. TANKER ORBIT PATTERNS

The following describes typical orbit patterns for jet aircraft and turboprop/conventional type aircraft.

a. Turbojet - Normally, a rectangle 60 NM long (48 NM uptrack and 12 NM downtrack from ARCP or anchor point) and 25 NM wide, oriented longitudinally along the ARIP-ARCP or anchor point segment of the track so as to provide 7 NM of airspace on the non-holding side of the refueling track and 18 NM of airspace on the holding side. This pattern shall normally be designed for left turns. When right turns are used, the orientation of the orbit pattern will shift accordingly. (See FIG 10-2-1, Components of a Typical Turbojet Aerial Refueling Track.)

b. Conventional/Turboprop - Normally, a rectangle 34 NM long (27 NM uptrack and 7 NM downtrack from ARCP or anchor point) and 18 NM wide, oriented longitudinally along the ARIP-ARCP or anchor point segment of the track so as to provide 4.5 NM of airspace on the non-holding side of the refueling track and 13.5 NM of airspace on the holding side. The pattern shall normally be designed for left turns. When right turns are used, the orientation of the orbit pattern will shift accordingly. (See FIG 10-2-2, Components of a Typical Conventional/Turboprop Aerial Refueling Track.)

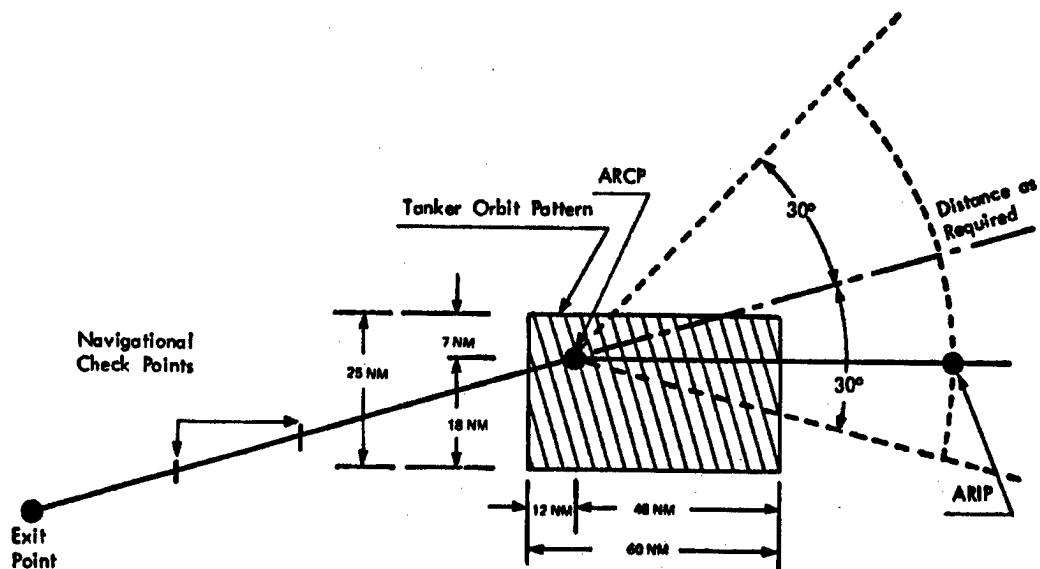


FIG 10-2-1

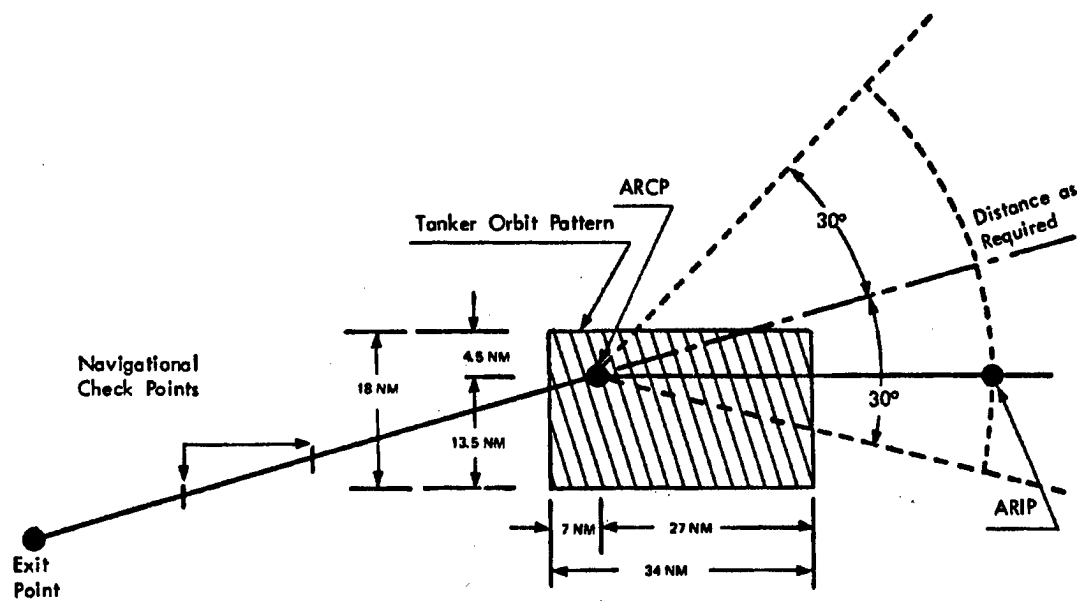


FIG 10-2-2

## Section 3. ANCHOR REQUIREMENTS

### 10-3-1. DESCRIPTION

a. The standard aerial refueling anchor pattern consists of a left-hand race track orbit with legs at least 50 NM in length. The legs will normally be separated by at least 20 NM. The orientation of the pattern is determined based on the inbound course to the anchor point. Four turn points are designated to describe the anchor pattern. (See Figure 10-3-1.)

#### NOTE-

① *An anchor pattern may be designed with legs greater than or less than 50 NM in length provided all parties agree that the length is sufficient for the proposed operation and that the refueling operation can safely be conducted within the confines of assigned anchor area.*

② *If other than the standard anchor pattern is used, the ATC facility must develop appropriate non-radar procedures.*

b. The standard anchor area consists of one or more entry points, an ARIP, anchor point, anchor pattern turn points, one or more exit points, and the designated refueling altitude block(s).

c. Instructions for preparing and submitting anchor proposals are contained in Section 4 of this chapter.

### 10-3-2. NAVIGATION WITHIN ANCHOR AREA

Anchor refueling shall be in accordance with the published pattern unless otherwise coordinated with the ARTCC/CERAP, or through a letter of agreement with the controlling agency. Navigation shall be accomplished predicated on one of the following:

#### NOTE-

*Clearance into an anchor area/track does not give aircraft on the track the ATCAA that may be associated with the anchor area/anchor track. Aircrews should specifically request the ATCAA if they need the ATCAA for refueling operations.*

a. NAVAID's while within usable range.

b. Airborne equipment utilizing geographical coordinates in remote areas without NAVAID reference.

c. Radar service provided by a military radar unit either ground-based or airborne.

d. Airborne radar as a secondary operation within the anchor area.

### 10-3-3. ARIP ESTABLISHMENT

The anchor ARIP shall be established:

a. Normally, a minimum of 70 NM from the anchor point and within 30 degrees either side of the extended anchor point leg at the uptrack end of the anchor pattern.

b. So as to provide for straight-line navigation from the ARIP to the anchor point leg at the uptrack end of the anchor pattern.

#### NOTE-

*Receiver entry at ARIP is not required when random rendezvous procedures have been coordinated prior to track/anchor entry and approved by the tanker commander. All maneuvers required to effect rendezvous must be contained within designated airspace.*

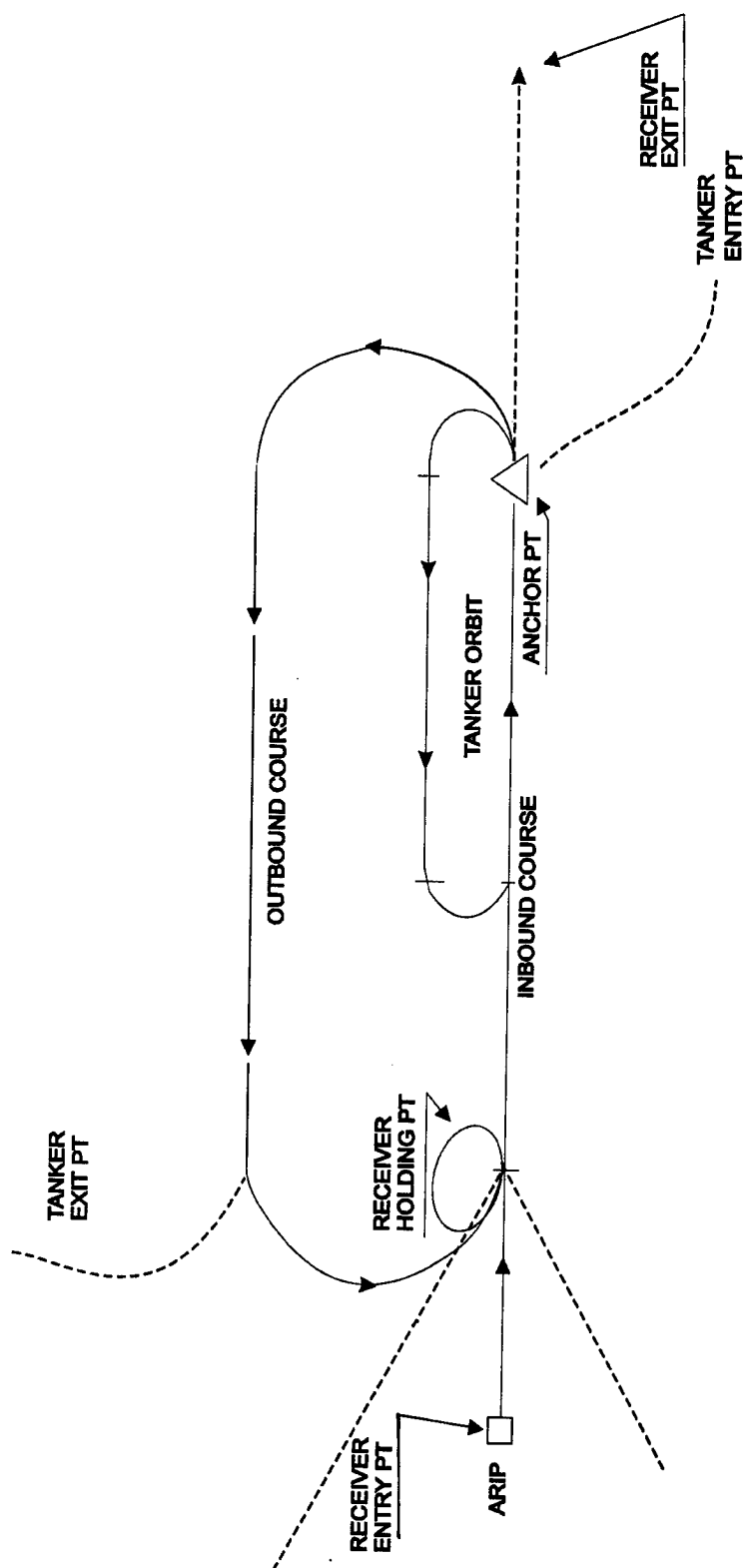
### 10-3-4. DEGREE-DISTANCE ANCHOR DEFINITION

Anchors predicated on degree-distance definition shall provide:

a. A means of navigation from the anchor ARIP to the anchor point via a usable NAVAID radial/distance.

b. A means of navigation from the exit point of the anchor area to proceed IFR en route via a usable NAVAID.

c. Anchor areas located in over water or remote areas or beyond the range of fixed NAVAID's shall be predicated on geographical coordinate route definition with suitable navigation means provided by the user command.



## ANCHOR PATTERN

FIG 10-3-1

## Section 4. PLANNING

### 10-4-1. TRACK/ANCHOR PROPOSALS

Proposals for establishing refueling tracks or anchors shall be submitted in the format and with the data depicted in FIG 10-4-1 to the appropriate ARTCC/CERAP with a copy to the appropriate regional military representative. In those airspace areas not under the direct jurisdiction of FAA, the theater command headquarters shall develop procedures for coordination and approval of proposed tracks and anchors.

### 10-4-2. COORDINATION

a. The ARTCC which received the request for establishment of an aerial refueling track or anchor shall assume the responsibility for FAA internal coordination, as necessary.

b. In areas not under FAA jurisdiction, the theater command headquarters which received the request for establishment of the track/anchor shall assume the responsibility for ensuring that necessary diplomatic coordination is completed prior to publication/use.

c. In the event the proposed track/anchor lies within special use airspace (SUA) or ATC assigned airspace (ATCAA), the using agency shall provide assurances, in writing, that air refueling operations will not conflict with other activities being conducted. Correspondence accompanying the initial proposal for refueling track/anchor shall include the written assurance.

### 10-4-3. CRITERIA FOR ESTABLISHMENT

a. Aerial refueling tracks may be established for use in either direction in sufficient length to satisfy the mission requirement.

b. Parallel tracks may be established provided a minimum of 30 NM exist between track centerlines.

c. Tracks/anchors may be established coincident with, parallel to, or across airways/jet routes as considered appropriate by the ATC facility.

d. Tracks/anchors shall be defined in relation to NAVAID's by degree-distance reference or by geographical coordinates.

e. Where anchors are established inside SUA or ATCAA's, entry and exit points shall be located on the boundary of the SUA or ATCAA for use as transfer of flight data information points, unless alternate entry and exit points are authorized by ATC.

#### NOTE-

*If activation of the ATCAA or SUA is desired for refueling operations, a request shall accompany the initial request for air refueling operations.*

f. The scheduling agency for the ATCAA shall ensure that pilots comply with the procedures in the LOA.

g. The receiver entry point (track/anchor) will be the ARIP.

h. The tanker entry point (track/anchor) will be the ARCP/anchor point and should be located to permit direct routing.

i. The following is guidance for establishing simultaneous opposite direction aerial refueling (SODAR):

1. Simultaneous refueling in opposite direction may be authorized between single AR tracks, which are vertically separated by a minimum of 2,000 feet between altitude blocks.

2. If it becomes necessary to assign SODAR aircraft altitude blocks which are outside the vertical limits of the AR tracks, controllers shall ensure a vertical separation minimum of 2,000 feet between assigned altitude blocks.

3. The SODAR procedure is not intended to apply to all refueling tracks (due to airspace configuration, traffic volume, etc.), however, ARTCC/CERAP's are expected to evaluate existing tracks for applicability upon user request.

4. If an existing single AR track qualifies for SODAR, it may be split into two separate tracks, or a new track may be created directly above or directly below the existing track. In either case, the tracks shall be vertically separated by 2,000 feet and each track shall be designated by a separate number.

5. Each published track description shall contain in remarks that it is authorized for simultaneous opposite direction aerial refueling (i.e., "SODAR authorized with AR \_\_\_\_").

6. SODAR tracks should be established for bi-directional use to permit course reversals without requiring altitude changes.

#### 10-4-4. APPROVAL NOTIFICATION

a. After receiving all impacted ARTCC/CERAP's concurrence of an aerial refueling track or anchor, the ARTCC/CERAP in which the AR track is initiated shall forward the Aerial Refueling Track/Anchor Proposal (See FIG 10-4-1), including all information required in FIG 10-4-1 and any other pertinent information to the regional AT division and military representatives.

b. In areas not directly under FAA jurisdiction, the theater command headquarters may, after final coordination and approval, forward the information required by paragraph 10-4-5 directly to National Imagery and Mapping Agency (NIMA) St. Louis for publication.

#### 10-4-5. PUBLICATION IN FLIP

After final coordination the military representative assigned to the FAA regional office shall forward the following information to NIMA for publication:

##### a. For tracks:

1. Number - The originator of the track/anchor shall obtain a route designator for use during coordination from NIMA/MCBB, Mail Stop L-27, 3200 South 2nd Street, St. Louis AFS, Missouri 63118 by letter, message (NIMA, St. Louis AFS, MO/MCBB), telephone (DSN 693-4636 or commercial 314-263-4636) or FAX (DSN 693-4997 or commercial 314-263-4997). The number in the designator provided by NIMA will be prefixed by an "X"; e.g., AR-X100, to indicate the number to be used for coordination purposes only. The prefix "X" will be deleted when published in FLIP Planning.

2. ARIP - Degree-distance and coordinate values.

3. ARCP - Degree-distance and coordinate values.

4. Navigation check points - Degree-distance and coordinate values.

5. Exit point - Degree-distance and coordinate values.

6. Communications/Rendezvous Plan - Obtained from HQ AMC TACC/SCOX (DSN 576-3134) by regional military representative if required.

7. Refueling altitudes.

8. Scheduling unit.

9. Assigned ATC facility.

10. Remarks including the list of coordination accomplished.

##### b. For anchors:

1. Number - Same procedures as in subparagraph a.1.

2. Description of anchor area - Coordinates.

3. Entry point(s) - Degree-distance and coordinate values.

4. ARIP(s) - Degree-distance and coordinate values.

5. Exit - Degree-distance and coordinate values.

6. Anchor pattern (four turn points) - Degree-distance and coordinate values.

7. Exit point(s) - Degree-distance and coordinate values.

8. Communications/Rendezvous Plan - Obtained from HQ AMC TACC/SCOX (DSN 576-3134) by regional military representative if required.

9. Military radar call sign and MHZ frequencies.

10. Refueling altitudes.

11. Scheduling unit.

12. Assigned ATC facility.

13. Operational time.

14. Remarks, including anchor point, inbound course, pattern width, pattern length, and the list of coordination accomplished.

15. State whether ATCAA is associated with anchor and list the scheduling agency for the ATCAA.

**10-4-6. MILITARY REGIONAL REPRESENTATIVE RESPONSIBILITIES**

a. Assure that all appropriate DOD and FAA coordination has been accomplished.

b. Obtain a Communications Rendezvous Plan (C/R Plan) from HQ AMC TACC/SCOX (DSN 576-3134), if necessary, and submit the information required in paragraph 10-4-5 to NIMA. The USN regional representative shall submit data to Naval Flight Information Group, Washington Navy Yard, Bldg. 176, 901 M Street SE, Washington, DC 20374-5088.

c. Maintain a master list of all current refueling tracks and anchors (both published and special) that fall within this area of responsibility, scheduling units, and assigned ATC facilities.

d. Ensure that the concerned ATC facilities are aware of the effective date of the track or anchor and any revisions thereto.

**10-4-7. NIMA RESPONSIBILITIES**

a. Assign track and anchor numbers and provide them to the originator upon request. Each published track or anchor shall be identified by the prefix "AR" followed by a number. Numbers shall be assigned consecutively in their particular group.

b. Should the track or anchor be outside Class A airspace areas, submit the following information

directly to FAA National Flight Data Center, (NFDC), 800 Independence Avenue, S.W., Washington, D.C. 20591, for publication on appropriate charts (by NOS) and assume responsibility for updating it as necessary.

1. Designated track or anchor number.

2. Geographical location of the track or anchor using NAVAID degree-distance definitions or geographical coordinates.

3. Location (State).

4. Track beginning.

5. Track end.

6. Altitudes.

**NOTE-**

*Alaskan information shall be submitted for inclusion in U.S. Government FLIP Supplement, Alaska.*

**10-4-8. EFFECTIVE DATE**

Refueling tracks and anchors and revisions thereto shall be effective upon the date of the DOD Flight Planning (FLIP) document publication.

**10-4-9. REVISIONS TO TRACKS/ANCHORS**

Revisions shall be processed in the same manner as new proposals.

AERIAL REFUELING TRACK/ANCHOR PROPOSAL FORMAT

1. TRACK/ANCHOR 2. EFFECTIVE DATE 3. ORIGINATING ACTIVITY 4. SCHEDULING ACTIVITY

Proposed  
Change  
CancelPublished  
UnpublishedDSN NO.  
COMM NO.DSN NO.  
COMM NO.

5. TRACK NO.

6. TYPE: ☐ TRACK ☐ SPECIAL ☐ ANCHOR ☐ VFR ☐ SODAR

7. ARIP/ENTRY POINT(S):

8. ARCP/ANCHOR POINT:

9. ORBIT/ANCHOR PATTERN DESCRIPTION:

10. RECEIVER HOLDING (NONRADAR)

a. Direction of turns:

a. Direction of turns:

11. TANKER ORBIT PATTERN (NONRADAR)

12. NAVIGATION CHECK POINT(S):

13. EXIT POINT(S):

14. CR PLAN/MILITARY RADAR:

a.  
b.  
c.  
d.  
e.

15. SODAR-Direction of Course Reversal Turn

16. REFUELING ALTITUDES:

17. ATCAA DESCRIPTION:

a. Times of Operation:

18. ASSIGNED ARTCC;  
ARCP:

EXIT:

19. REMARKS:

20. ATTACHMENTS:

DATE OFFICE  
SYMBOL ORIGINATING  
ACTIVITYDATE OFFICE  
SYMBOL AIR ROUTE TRAFFIC  
CONTROL CENTERDATE OFFICE  
SYMBOL MILITARY/MAJOR/TYPER  
COMMANDDATE OFFICE  
SYMBOL REGIONAL MILITARY  
REPRESENTATIVE

DATE ATM-410 FAA ACCLO

FIG 10-4-1



## Section 5. OPERATIONS

### 10-5-1. PROVISIONS FOR CONDUCTING AERIAL REFUELING

a. Aerial refueling is based on the requirement that participating aircraft operate and remain in specifically designated airspace.

1. Departure or other clearances which contain the track or anchor as a route element are not intended to authorize the aerial refueling operation itself.

**NOTE-**

*A further specific ATC clearance for the conduct of aerial refueling is required except on an ALTRV.*

2. Throughout the refueling operation, controller initiated heading assignments may not be effected without the concurrence of the tanker.

3. Each aircraft must receive a specific clearance prior to leaving the refueling track/anchor. In the event of no clearance:

(a) The tanker(s) and receiver(s) will continue on the tanker's filed route and assigned block altitudes until a clearance to separate the flight can be obtained, or

(b) The aircraft will request an extension of the aerial refueling track.

**NOTE-**

*Aerial refueling operations are terminated at the end of the refueling point unless an extension of the aerial refueling track is received.*

(c) Aerial refueling operations are normally conducted on tracks or in anchor areas published in the DOD FLIP document "AP/1B."

b. There are certain mission requirements and operational considerations which may necessitate en route refueling operations or the establishment of special tracks/anchors not published in the FLIP document or in MOA/ATCAA/joint-use restricted areas when covered in letters of agreement.

1. En route refueling may be conducted between aircraft within a flight when the refueling is performed within the flights assigned altitude block/airspace. When this occurs, the ARTCC/CERAP will be advised prior to commencing air refueling operations.

2. When special tracks/anchors must be established, the command processing the receiver aircraft shall ensure compliance with the provisions set forth in Section 6 of this chapter.

c. All refueling operations shall be conducted on an IFR flight plan at assigned altitudes/flight levels except as provided for in paragraph 10-6-12 of this chapter.

d. All aircraft conducting aerial refueling operations should request and be assigned at least three (3) consecutive altitudes/flight levels.

1. Refueling aircraft may use these altitudes/flight levels as required to accomplish refueling operations. If additional altitudes are required to satisfy requirements, prior clearance shall be obtained from the appropriate ATC facility.

**NOTE-**

*Additional altitudes shall not be requested/granted for practice of emergency break-away procedures.*

2. The provisions of this paragraph do not apply when aircraft are operating in an ALTRV or when clearance has been granted by ATC for the aircraft to operate as an en route cell formation.

### 10-5-2. USER REQUIREMENTS

a. The user command requesting the establishment of a track/anchor shall assign to a specific unit the responsibility for scheduling all refueling operations on the track or anchor. The scheduling unit shall review the track/anchor for utilization to determine the need for retention.

b. The FAA or theater command headquarters, as appropriate, shall assign responsibility to a specific Air Traffic facility for coordinating refueling operations with the scheduling unit for each track/anchor.

c. Intermediate commands shall be responsible for developing standardized procedures for use by these units in scheduling refueling operations.

d. Any unit planning to conduct refueling operations shall coordinate each operation with the unit assigned the responsibility for scheduling the track/anchor.

### 10-5-3. MARSa APPLICABILITY FOR AERIAL REFUELING

a. MARSa begins between the tanker and receiver(s) when the tanker advises ATC that it is accepting MARSa.

b. After MARSa has been declared, controller assigned course or altitude changes prior to rendezvous completion will automatically void MARSa and are to be avoided.

c. Once rendezvous is completed:

1. Headings and altitudes assignments may be made with the tanker concurrence with MARSa remaining in effect.

2. Each tanker shall keep receiver(s) aircraft in either standard or non-standard formation until further ATC clearances are received and standard separation is achieved.

3. Other nonparticipating aircraft may be cleared through the refueling block airspace with proper separation once the tanker and receiver(s) have proceeded down track.

d. MARSa ends between the tanker and receiver(s) when:

1. The tanker and receiver aircraft are vertically positioned within the air refueling airspace,

2. Standard ATC separation is established, and

3. ATC advises MARSa is terminated.

### 10-5-4. CRITERIA FOR SCHEDULING

a. Scheduling criteria to ensure adequate airspace for aircraft conducting aerial refueling on tracks shall be as follows:

1. Simultaneous refueling in the same direction:

(a) Authorized for single tracks. A 2,000-foot altitude separation shall be provided between assigned altitude blocks/airspace.

(b) Authorized for parallel tracks which have 30 NM separation between centerlines. Refueling operations may be accomplished on each

track at the same altitudes. Multiple refueling may be accomplished on each track if the altitude separation required for single tracks is provided.

2. Simultaneous refueling in opposite directions:

(a) Not authorized on single tracks.

(b) May be authorized between single AR tracks, which are vertically separated by a minimum of 2,000 feet between altitude blocks.

#### NOTE-

*The opposite direction procedure is not intended to apply to all refueling tracks, due to airspace configuration, traffic volume, etc. However, ARTCC/CERAP's are expected to evaluate individual tracks for applicability upon request. The processing of approved requests shall be in accordance with the existing procedures in Section 4 of this chapter.*

(c) Authorized for parallel tracks which have 30 NM separation between centerlines.

3. MARSa is applicable between refueling aircraft operating on parallel tracks at the same altitude.

4. When necessary to reverse the direction of use of a track, a mandatory exit time shall be prescribed by the scheduling unit for the last refueling aircraft prior to reversing direction. This exit time shall be the scheduled exit time plus 10 minutes. A 25-minute sterile time shall be added to the mandatory exit time prior to scheduling the first tanker entry for the opposite direction refueling.

5. Minimum Entry Intervals:

(a) Point-Parallel Rendezvous - A 40-minute entry interval shall be planned between tankers at the same altitude except when operating in an ALTRV. Tanker aircraft shall arrive at the ARCP no earlier than ARCP minus 20 minutes and depart no later than ARCP plus 10 minutes unless specifically cleared by the appropriate ATC facility for an extended delay. If clearance for a longer delay cannot be granted or notification of receiver abort is received, the tanker shall proceed down track until an amended ATC clearance can be granted. Receiver aircraft shall arrive at the ARCP no earlier than ARCP minus 5 minutes and depart no later than ARCP plus 10 minutes.

(b) **En Route Cell Rendezvous** - A minimum 20-minute entry interval shall be scheduled between air refueling cells at the same altitude and the same geographic point. Both tanker(s) and receiver(s) shall arrive at the rendezvous point within +/- 5 minutes of the rendezvous control time. (See FIG 10-5-1, FIG 10-5-2, and FIG 10-5-3.)

(c) **Mixed Rendezvous** - Air refueling tracks scheduled for an en route rendezvous followed by a point-parallel or vice versa, the minimum entry interval shall be 40 minutes.

b. **Scheduling criteria to ensure adequate airspace for aircraft refueling within an anchor area shall be as follows:**

1. **Single Anchors** - Simultaneous refueling is authorized for single anchors when standard separation is applied.

2. **Multiple Anchors** - Simultaneous refuelings may be accomplished in anchors which have 80 NM separation between anchor points.

3. **Multiple air refueling in one anchor/anchor track** - 2,000 feet vertical separation between altitude blocks shall be planned and used.

4. **Minimum Entry Intervals** - A 10-minute interval shall be maintained between the anchor area exit time of a tanker departing from an anchor and the anchor area entry time of a tanker arriving in the anchor at the same altitude.

**NOTE-**

*The entry intervals outline in subparagraphs a and b are permissive and are not intended to preclude greater entry intervals which may be desirable or necessary to satisfy specific track/anchor restrictions or mission requirements.*

c. Tankers may be scheduled to enter the track or anchor by direct routing to the ARCP or anchor point.

d. Tanker/receiver shall be scheduled to depart the track or anchor at specified navigation checkpoints or exits. In event of no clearance, the tanker(s) and receiver(s) will continue on the tanker's filed flight plan until a clearance to separate the flight can be obtained, or request an extension of the aerial refueling track, as appropriate.

e. MARSAs may be applicable between a refueling operation and other aircraft specifically identified in the refueling schedule or approved by the scheduling unit to transit the published track/anchor.

### 10-5-5. SCHEDULING RESPONSIBILITIES

a. Each aerial refueling track/anchor shall have a designated military unit responsible for scheduling all military flights intending to use the track/anchor. If the designated military unit does not have a continuous point of contact; i.e., a unit subject to deployment or a unit not available during normal work days (ANG unit working Wednesday-Sunday), then an alternate scheduling agency shall be designated.

b. Each scheduling unit (primary or alternate) shall:

1. Submit to the assigned ATC facility at least 24 hours in advance a daily refueling schedule for each track or anchor including the:

(a) Requested refueling levels.

(b) Requested time of use.

(c) Call signs of tanker(s) and receiver(s).

**NOTE-**

1. *The assigned ATC facility may advise the scheduling unit to discontinue submitting daily refueling schedules if concerned ATC facilities do not need advance information.*

2. Advise the assigned ATC facility as soon as practicable of any cancellations to the schedule.

3. Obtain approval for the following from the assigned ATC facility:

(a) The schedule as submitted.

(b) Use of two altitude blocks simultaneously; e.g., 150B160 and 250B260.

(c) En-route Cell Rendezvous operations.

4. Coordinate with other scheduling units to resolve all conflicts in altitudes and/or times for tracks/anchors which cross, underlie, or are parallel prior to submitting to the assigned ATC facility.

5. Notify other scheduling units when assigned tracks/anchors are to be used or crossed during No-Notice exercises.

6. Clearly indicate the following information on the unit flying schedules:

- (a) Track or anchor scheduled entry time.
- (b) ARCT/anchor point control time.
- (c) ARCP/anchor point departure time.
- (d) Track or anchor scheduled/mandatory exit time.

c. Receiver Unit Responsibility - Each receiver unit shall:

1. Obtain refueling times for each desired track/anchor from the appropriate scheduling unit.

2. Provide call signs for the participating aircraft to the scheduling unit not later than 1600 hours (scheduling unit time) on Tuesday of the week preceding the scheduled activity.

3. Promptly notify the scheduling unit of any canceled or delayed refueling.

d. ATC Facility Responsibility - The assigned ATC facility shall forward the daily refueling schedule and any revisions to other concerned ATC facilities. In the event disapproval is necessary, suitable alternate times, altitudes, tracks, or anchors shall be coordinated with the scheduling unit.

#### 10-5-6. FLIGHT PLAN REQUIREMENTS

Instructions/information concerning the filing of flight plan data for aerial refueling operations is contained in the Flight Information Publication (FLIP) document. The following data shall normally be included by refueling aircraft:

a. Refueling levels requested for the refueling operations. All aircraft require 1,000 feet separation between the lowest tanker altitude and the applicable receiver altitude from the track ARIP to ARCP or from the ARIP to anchor point. If this altitude separation cannot be provided, the participating aircraft are not authorized to proceed with the rendezvous.

b. ARCP/anchor point.

#### NOTE-

*When operating in an air refueling anchor area, tankers are authorized to file directly to the anchor point without crossing an anchor area entry point.*

c. ARIP.

#### NOTE-

*Tankers conducting an en route rendezvous will also normally file to the ARIP.*

- d. Duration of delay at ARCP/anchor point.
- e. Track or anchor number.
- f. Track/anchor exit point.

#### 10-5-7. TANKER AIRCRAFT/FORMATION COMMANDER RESPONSIBILITIES

Tanker aircraft or formation commander shall be responsible for:

a. Remaining within the assigned aerial refueling track.

#### NOTE-

*Air refueling will not take place until MARSAs are declared.*

b. Notifying the appropriate ATC facility of all altitudes vacated and not anticipated for further use by refueling aircraft. Such altitudes shall not be reoccupied without further ATC clearance.

c. Receiver navigation, regardless of the number of receivers, after rendezvous completion through completion of refueling operations (air refueling and MARSAs have been terminated) except when under control responsibility of a military radar facility while in an anchor/anchor track area.

d. Maintaining communications with the appropriate ATC facility.

1. All communications during refueling operations, including those concerning the receivers, shall be between the ATC facility or military radar unit and tanker.

2. To the extent practical, receivers shall establish communications with the tanker prior to or when departing the ARIP on the specified air refueling frequency.

3. The tanker shall advise receivers if the clearance to conduct air refueling has or has not been received.

4. Tanker(s) will assume position reporting responsibility for the receivers upon rendezvous completion.

e. Requesting further en route clearance/altitude assignment:

1. From the ATC facility for both the receiver and tanker at least 5 minutes prior to refueling completion, in accordance with paragraph 10-5-9, except when both aircraft are operating on an approved altitude reservation (ALTRV).

2. Through the radar controller when operating in refueling anchors with a military radar unit (MRU). At least 5 minutes prior to completing refueling operations, the military radar facility shall forward requests to the assigned ATC facility and subsequently relay ATC clearances for the tanker and receiver aircraft from the ATC facility.

f. Vertically positioning aircraft prior to reaching the planned exit point, to facilitate the safe and efficient transfer of responsibility from the military, under the provisions of MARSA, to the ATC facility upon completion of refueling operations. The vertical separation of receivers and tanker aircraft shall be accomplished within the assigned altitudes.

g. Providing each receiver, upon request, with the aircraft's position at the completion of refueling operations. Additional information concerning amendments of changes to the receiver's ATC clearance shall also be provided as appropriate.

h. Coordinate new aerial refueling track times with the scheduler if unable to meet the scheduled ARCT(s) and minimum entry intervals.

#### **10-5-8. RECEIVER AIRCRAFT RESPONSIBILITIES**

Receiver aircraft shall be responsible for:

a. Initiating the request for altitude change in sufficient time to reach the required air refueling block altitude prior to the ARIP.

b. Squawking normal when separation from tanker is greater than three (3) miles.

c. Maintaining two-way radio contact with ATC until released by ATC to the tanker.

#### **10-5-9. ATC CLEARANCE**

The tanker commander shall receive specific ATC clearance from the appropriate ATC facility for the following:

a. Entry to/exit from assigned aerial refueling altitude block.

b. Altitudes requested for tanker and receiver aircraft upon completion of air refueling.

c. Routing for each aircraft or formation flight when:

1. Exiting the refueling track prior to or beyond the exit point, or

2. Different from the flight plan routing.

d. Extending the refueling operation beyond the track/anchor exit point due to adverse winds, mission requirements, etc.

e. Use of altitudes in excess of those for which specific clearance has been granted (i.e., tobogganing).

#### **NOTE-**

*During refueling, altitude and temperature conditions may exist which decrease the receiver's available thrust and maneuverability. In this event, the receiver may request a "toboggan" in order to receive a full fuel onload. The toboggan maneuver is accomplished by the tanker descending wings level at refueling air-speed and a constant rate of 200-300 FPM with the receiver maintaining the refueling contact.*

#### **10-5-10. RADAR VECTOR ASSISTANCE**

Radar vector assistance for rendezvous may be given by the ATC facility when requested by participating aircraft when appropriate altitude separation is provided. Assistance shall be terminated when the receiver has visual contact with the tanker.

#### **10-5-11. ATC FACILITY RESPONSIBILITIES**

The appropriate ATC facility shall ensure that:

a. Standard IFR separation is maintained until MARSA is declared by the tanker.

b. After MARSA is declared, receiver aircraft are released to tanker C/R frequency departing the ARIP, traffic conditions permitting, or unless otherwise coordinated.

#### **NOTE-**

*It is essential that receivers be released to the tanker no later than the ARIP. If ATC cannot release the receivers, additional instructions must be provided immediately. Any delay in releasing the receivers significantly complicates the air refueling.*

c. Upon request, receiver or tanker aircraft are provided assistance, to the extent possible, to confirm the other's position.

d. In the application of vertical separation based on altitude vacating reports, the altitude vacated shall not be used until the aircraft has reported reaching the next IFR altitude.

e. If necessary to assign SODAR aircraft altitude blocks which are outside the vertical limits of the tracks, a vertical separation minimum of 2,000 feet will be maintained between assigned altitude blocks.

f. An ATC clearance is issued and acknowledged through the tanker aircrew for each aircraft or formation flight:

1. Refueling anchor.

2. Refueling track when exiting prior to/beyond the exit point, or if routing is different from the flight plan route.

g. An en route altitude assignment is issued for each aircraft or formation flight exiting a refueling track at the flight plan exit point.

h. Receiver aircraft that have been cleared to conduct air refueling and have departed the ARIP are issued instructions pertaining to the operation of the transponder in accordance with mileage parameters listed in the pertinent paragraphs on Military Aerial Refueling in FAA Order 7110.65.

i. The ARTCC/CERAP shall notify the appropriate tie-in AFSS/FSS at least 2 hours in advance when an established aerial refueling

track/anchor will be activated if all or part of the activity will take place outside of applicable SUA or Class A airspace.

j. The tie-in AFSS/FSS shall transmit a NOMAM/D of this planned refueling activity. The AFSS/FSS(s) will provide the notice information to pilots during inflight/preflight briefings.

#### **10-5-12. COMMUNICATIONS FAILURE**

Aircraft experiencing two-way communications failure during the conduct of aerial refueling shall continue flight in accordance with the following procedures:

a. Squawk code 7600 for at least two (2) minutes prior to exiting the track or anchor. After exit, continue squawk in accordance with "Procedures for Two-Way Radio Failure IFR-VFR" set forth in the DOD Flight Information Handbook.

b. Tanker aircraft which have not received altitude instructions beyond the exit point shall exit the track or anchor at the highest altitude specified in the clearance for the refueling portion of the flight and proceed in accordance with "Procedures for Two-Way Radio Failure IFR-VFR" set forth in the DOD Flight Information Handbook.

c. Receiver aircraft which have not received altitude instructions beyond the exit point shall exit the track or anchor at the lowest altitude specified in the clearance for the refueling portion of the flight and proceed in accordance with "Procedures for Two-Way Radio Failure IFR-VFR" as set forth in the DOD Flight Information Handbook.

## En Route Cell Rendezvous for Air Refueling

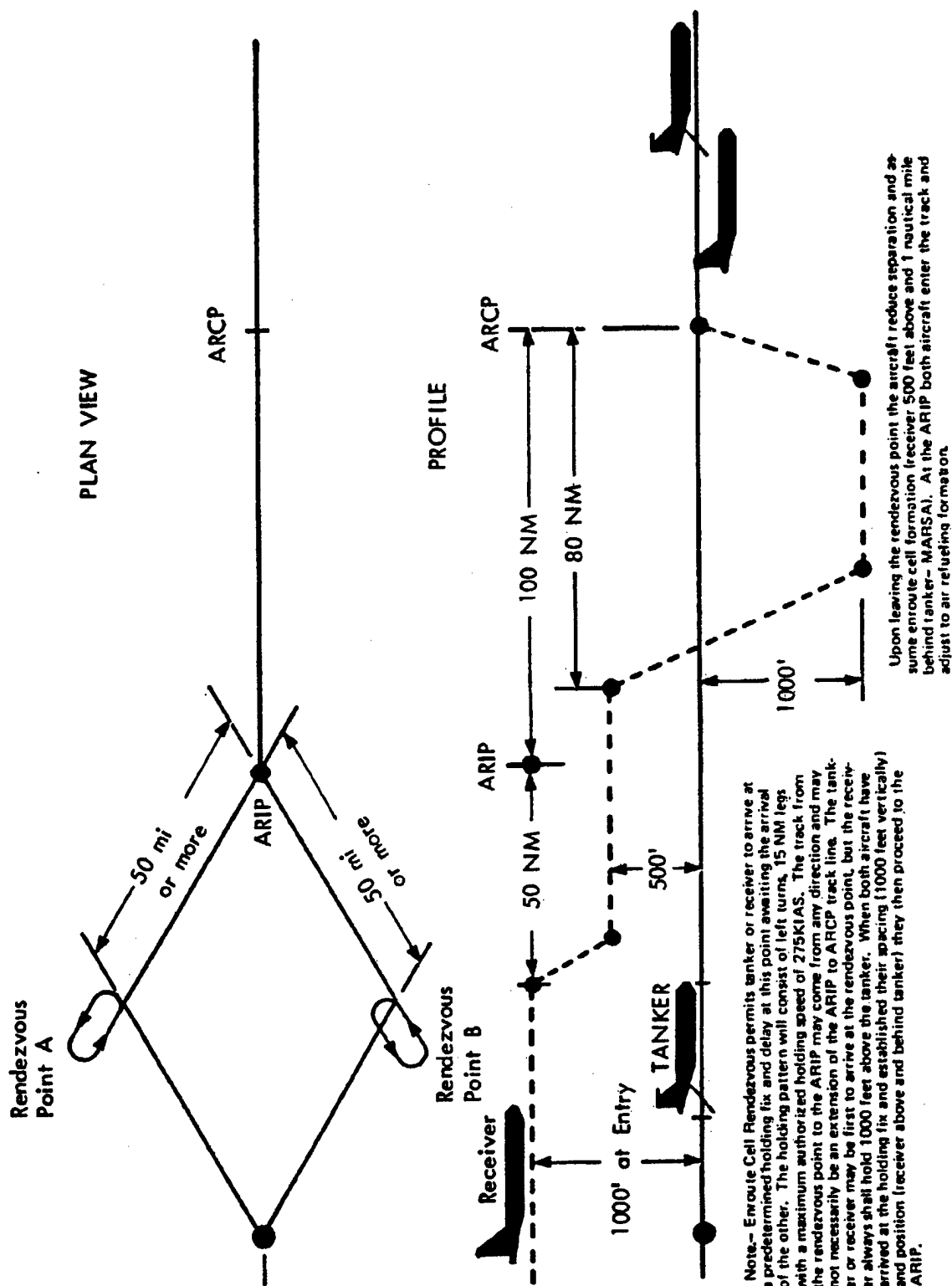


FIG 10-5-1

# En Route Cell Rendezvous for Air Refueling Turbojet Tanker/Tactical Fighter

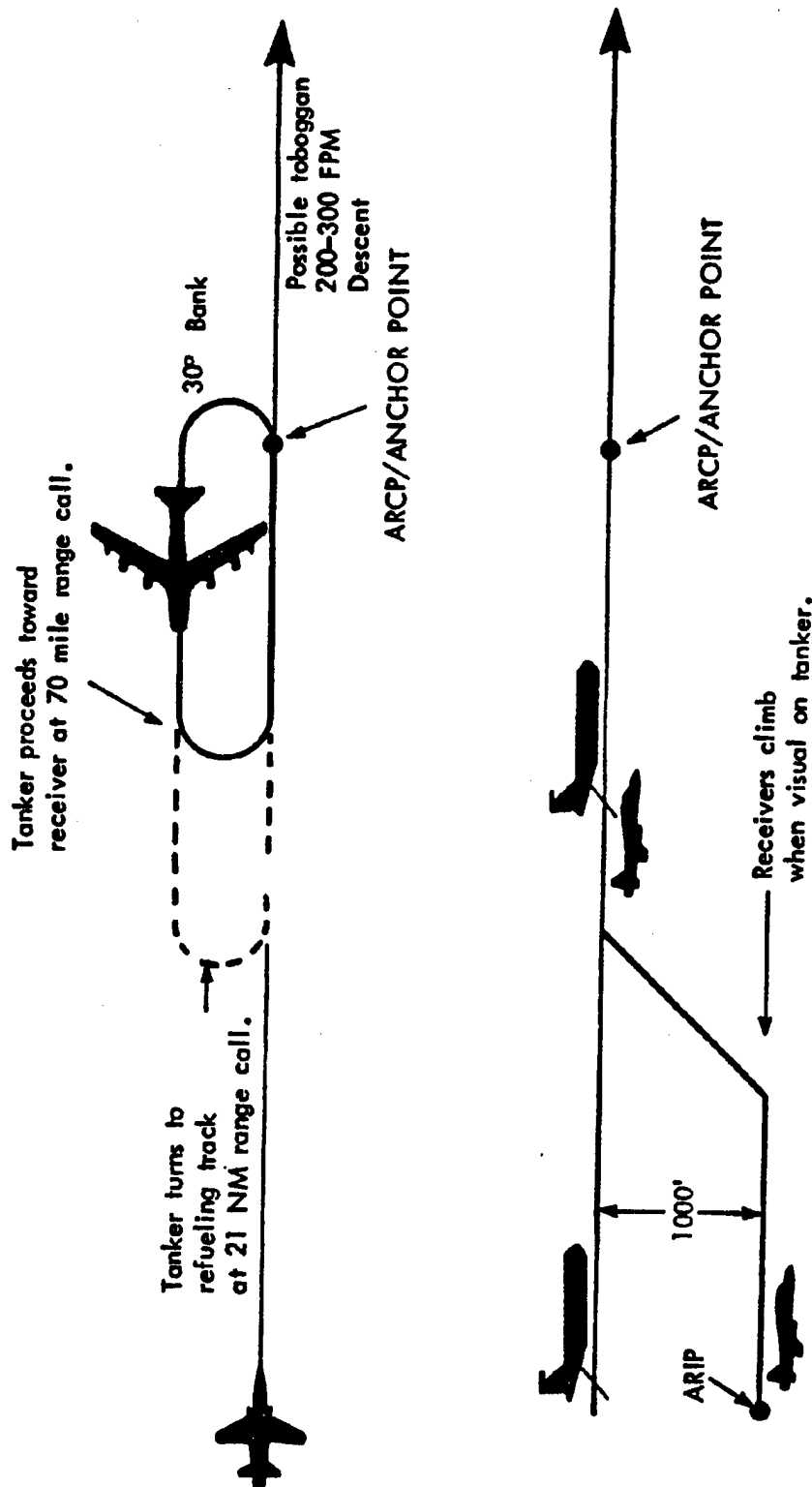


FIG 10-5-2



### En Route Cell Rendezvous for Air Refueling Turbo Prop Tanker/Tactical Fighter

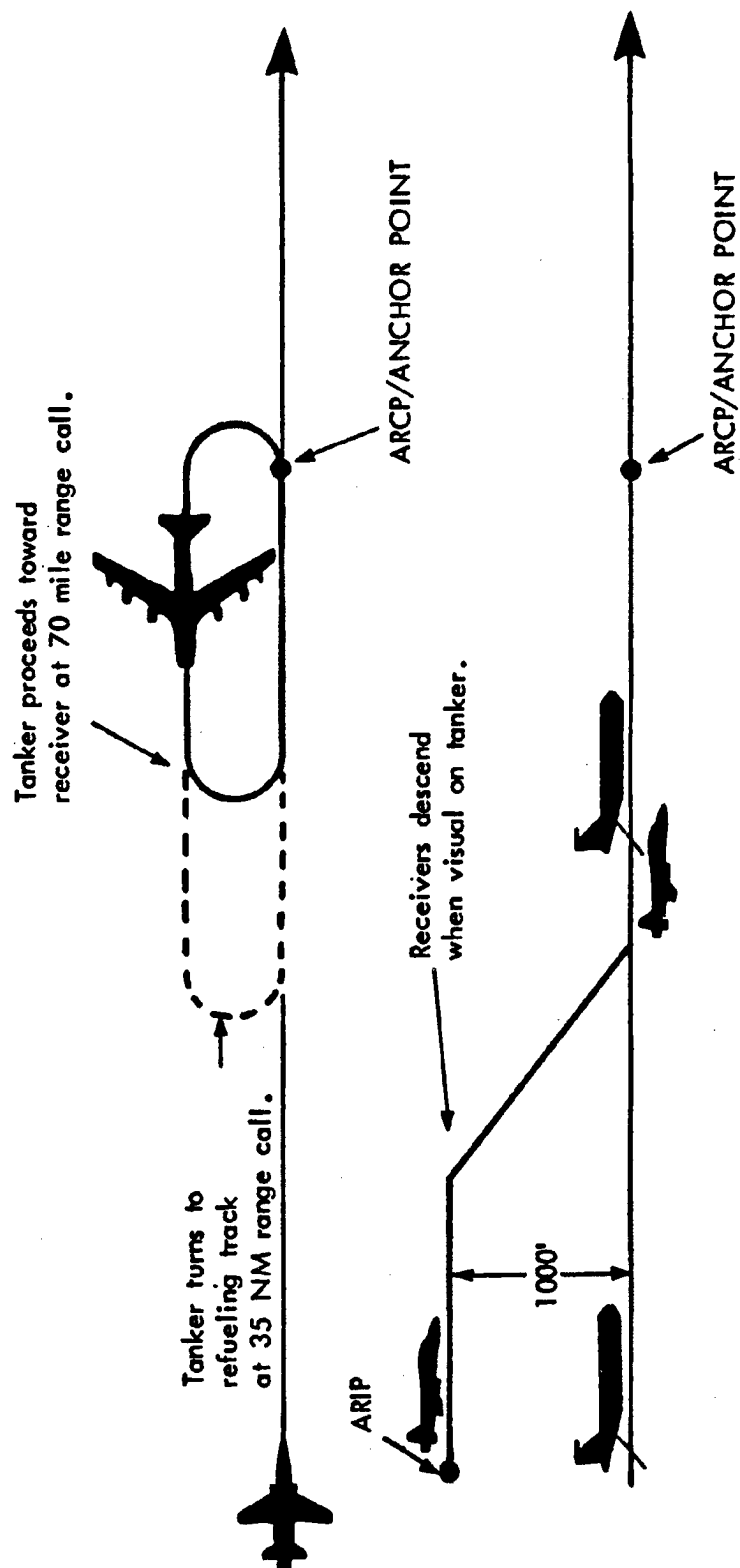


FIG 10-5-3

## Section 6. SPECIAL REFUELING REQUIREMENTS

### 10-6-1. PROVISIONS FOR SPECIAL TRACKS/ANCHORS

The U.S. Military/FAA agreement for the conduct of aerial refueling operations embraces the concept of maximum use of published tracks/anchors. However, in recognition of the requirement for flexibility, the following special provisions are incorporated.

a. Where published tracks/anchors are inadequate for special mission/sortie, a special track/anchor may be established. Special tracks/anchors shall not be published in the DOD FLIP planning document, but may be described in letters of agreement.

b. Special tracks/anchors may be established for one time use by direct coordination with the appropriate ATC facility.

c. Special tracks/anchors for other than one time use require approval of the major military command concerned and coordination with the military regional representative.

### 10-6-2. RESPONSIBILITY OF REQUESTING UNIT

Except when special tracks/anchors are requested in accordance with paragraph 10-6-6, the requesting unit shall be responsible for obtaining approval to transit or use:

a. SUA/ATCAA from the using agency. Assurance must be obtained from the using agency that no other activity is scheduled in the area at same time/altitudes.

b. A published refueling track or anchor from the assigned scheduling unit.

c. An MTR entry or exit, including associated tracks, from the designated scheduling unit.

#### NOTE-

*Notification of such approval is not required by FAA.*

### 10-6-3. OPERATIONS WITHIN AN ALTRV

Missions operating in an approved altitude reservation (ALTRV) may conduct refueling operations within the ALTRV airspace. (See Chapter 3.)

### 10-6-4. OPERATIONS OUTSIDE AN ALTRV

Missions not operating in an ALTRV may conduct refueling operations along special tracks/anchors within airspace approved for use as follows:

a. Units shall submit an approval request directly to the ATC facility concerned at least 12 hours in advance, or as soon as possible, to permit coordination and receipt of approval.

b. The approval request shall specify the following:

1. The portion of the route where refueling operations will be conducted.

2. ARCP patterns or rendezvous points if an En Route Cell Rendezvous is planned.

3. Altitudes requested.

4. Lateral dimensions of the airspace required.

5. Duration of operation.

6. Control times.

7. Any other information deemed necessary or requested.

c. The requirements for establishing special tracks/anchors are not applicable for refuelings conducted between aircraft operating as an en route formation.

### 10-6-5. IN-FLIGHT REQUESTS

The tanker commander is responsible for coordinating all in-flight requests with other aircraft in the refueling operation prior to the submission of such request to ATC. The provisions of MARSAs remain in effect during the execution of approved in-flight vectors unless separation responsibility is specifically assumed by the approving ATC facility. In-flight requests for radar vectors or alternate routes or altitudes to avoid weather or for emergency refueling may be approved only at the request of the tanker commander as follows:

a. Radar vectors or changes of altitude may be approved at any time.

b. Nonradar routes may be approved only after the refueling aircraft have passed the ARCP.

### 10-6-6. SPECIAL EXERCISES

Special tracks/anchors may be established for use during planned exercises to meet a specific mission requirement. This will be accomplished through a letter of agreement with the appropriate ATC facility and requires the approval of the major military command(s) concerned and coordination with the military regional representative.

### 10-6-7. ISSUE NOTAM

NOTAM/D's shall be issued for special tracks/anchors outside Class A airspace so as to define the refueling area as specifically as mission security will allow.

### 10-6-8. VFR HELICOPTER REFUELING OPERATIONS

Headquarters United States Air Force/Navy/Marine Corp/Army have stated a requirement to conduct VFR helicopter in-flight refueling operations at altitudes from 4,000 feet AGL down to 1,000 feet AGL at speeds below 150 knots.

### 10-6-9. VFR REFUELING TRACK ESTABLISHMENT

a. Military units may request establishment of a VFR helicopter refueling track when a determination has been made:

1. By appropriate military headquarters (major command/type command) that other alternatives have been explored; e.g., use of existing MOA's, restricted areas, or other published refueling tracks.

2. That coordination with the scheduling agencies of other military airspace/routes has been accomplished to develop mutually acceptable deconfliction criteria/procedures.

3. That the number of tracks shall be kept to the absolute minimum required to meet mission requirements.

b. The originator of the track shall obtain a route designator for use during coordination from NIMA/MCBB, Mail Stop L-27, 3200 South 2nd Street, St. Louis AFS, Missouri 63118, by letter, message (NIMA ST. LOUIS AFS MO/MCBB) or telephone (DSN 693-4636 or commercial

314-263-4636) or FAX (DSN 693-4993 or commercial 314-263-4997). The number in the designator provided by NIMA will be prefixed by an "X"; e.g., AR X800V, to indicate the number to be used for coordination purposes only. The prefix "X" will be deleted when published in FLIP planning. The suffix "V" has been added to indicate a visual or VFR helicopter refueling track.

c. VFR published refueling tracks shall:

1. Be operationally flight evaluated for the entire track to ensure compatibility with VFR obstacle clearance.

2. Be depicted on DOD FLIP AP/1B charts.

#### NOTE-

*Following MAJCOM/TYCOM and FAA approval (reference paragraph 10-4-7), the regional military representative will forward the route description to NIMA for publication in FLIP.*

3. Be depicted on appropriate aeronautical charts.

#### NOTE-

*The regional Air Traffic division in whose area the route originates is responsible for submitting the route description for publication. A charting request shall be submitted to the NFDC.*

### 10-6-10. REFUELING TRACK DEFINITION

a. Track width - In all cases, the refueling track shall be of sufficient size to contain all planned activities. Normally, VFR refueling tracks will be 4NM either side of centerline unless otherwise specified.

b. Track length - Normally 50-100 NM.

c. Track alignment - Track alignment criteria shall be as follows:

1. Track widths shall be designed to permit refueling aircraft to avoid Class B, C, D, airspace and Class E surface based areas below 3,000 feet AGL, scheduled air carrier airports, and high-density general aviation airports.

2. All VFR refueling tracks to be flown at/below 1,500 feet AGL should be designed to permit aircraft flying the track to avoid charted, uncontrolled airports by 3 NM or 1,500 feet. Where it is impracticable to comply with this criteria, procedures shall be established to minimize conflict with airport traffic by maintaining liaison with airport owners/operators.

3. Avoid known VFR flyways.
4. Tracks should be aligned to minimize disturbance to people or property on the ground.

#### 10-6-11. OPERATING PROCEDURES

a. The scheduling unit shall notify the tie-in AFSS/FSS in advance of all planned refueling track usage on a daily basis. This shall include route designator, time period, and altitude if other than published.

b. Appropriate ATC facilities (en route and terminals), wherein radio and radar coverage exist along the VFR track, shall provide radar advisory service (reference Order 7110.65) to tanker aircraft.

c. The tie-in AFSS/FSS shall transmit a NOTAM/D via data communications systems to all AFSS/FSS's in accordance with FAA Order 7110.10 and Order 7930.2.

d. AFSS/FSS's shall include pertinent VFR refueling activity in pilot briefings in accordance with FAA Order 7110.10.

e. Tanker aircraft pilots scheduled to operate within VFR refueling tracks shall advise the AFSS/FSS nearest the entry point 5 minutes prior to entering and the AFSS/FSS nearest the exit point, upon exiting.

#### 10-6-12. FLIGHT PLAN REQUIREMENTS

a. Pilots departing on IFR clearance en route to a helicopter refueling track are required to file to the fix/radial/distance of their entry/alternate entry point of the track.

b. Pilots transitioning to IFR upon exiting the helicopter refueling track are required to have on file a previously filed IFR flight plan from the appropriate fix/radial/distance of their exit point.

#### NOTE-

*Except in Alaska, composite IFR-VFR-IFR flight plans may be filed with appropriate AFSS/FSS and BASEOPS. Stereo flight plans could be an advantage in flight planning.*

#### 10-6-13. WEATHER MINIMUMS

Operations on VFR refueling tracks shall be conducted only when the weather is at or above VFR minimums.

#### 10-6-14. ADHERENCE TO REFUELING TRACK

Pilots operating on VFR refueling tracks shall be responsible for remaining within the lateral and vertical confines of the VFR refueling tracks.

#### 10-6-15. FAA COORDINATION

a. Proposals for establishing VFR refueling tracks shall be submitted in the format and with the data depicted in FIG 10-4-1 to the appropriate ARTCC/CERAP with a copy to the appropriate regional military representative. In those airspace areas not under the direct jurisdiction of FAA, the theater command headquarters shall develop procedures for coordination and approval of proposed tracks and anchors.

b. The ARTCC/CERAP which received the request for establishment of an aerial refueling track shall assume the responsibility for FAA internal coordination as necessary. Following ARTCC/CERAP comment/concurrence, the originating unit will forward the final proposal to the military major/type command for approval. The military major/type command will forward the proposal to the regional military representative for final review, coordination, and publication.

c. FAA regional Air Traffic divisions shall review each proposed VFR helicopter refueling route and coordinate it with other interested FAA divisions. The regional review will include a determination that the proposed VFR refueling tracks are consistent with the criteria contained in this part. Terminal Air Traffic facilities will be included in the development of tracks transiting their airspace.

d. Unusual requirements, not in accordance with this criteria, for limited/onetime-use VFR tracks, will be coordinated directly with appropriate military headquarters.

#### 10-6-16. PUBLICATION/SCHEDULING

The military shall designate a scheduling activity for each VFR refueling track. (See paragraph 9-2-1.)

# Chapter 11. MILITARY TRAINING ROUTES (MTR)

## Section 1. GENERAL

### 11-1-1. PURPOSE

This chapter prescribes policy, criteria, administrative, and operating procedures pertaining to routes for military training/RDT&E conducted below 10,000 feet MSL, in excess of 250 KIAS. Although the MTR structure is intended for operations below 10,000 feet MSL, route segments may be defined at higher altitudes.

### 11-1-2. POLICY

The policy concerning military operations in excess of 250 KIAS below 10,000 feet MSL is specified in the Letter of Authorization granted to DOD. (See Appendix 18.)

### 11-1-3. DEVIATIONS

a. The FAA regional Air Traffic division managers may authorize deviations from the provisions of this chapter when user requirements cannot be supported within established criteria. They may not waive the provisions contained in the Letter of Authorization granted to DOD.

b. Approved deviations from this chapter shall be fully coordinated and shall contain provisions to assure an appropriate level of safety. Copies of approved deviations shall be forwarded to FAA

Headquarters, ATO-130, by the originating FAA region.

### 11-1-4. PUBLICATION

MTR's shall be published as follows:

a. IFR En Route Low Altitude Chart - The civil version of this chart depicts all IR's and those VR's that accommodate operations above 1,500 feet (AGL).

b. IFR/VFR Wall Planning Chart:

1. IFR - This chart depicts those activities outlined in subparagraph a.

2. VFR - This chart depicts those activities outlined in subparagraph c.

c. VFR Sectional Aeronautical Chart - It is intended that this chart will depict all areas of military training activities; i.e., IR's and VR's regardless of altitude, military operation areas, restricted, prohibited, warning, and alert areas.

d. DOD FLIP AP/1B and AP/3 - These publications, furnished by the DOD, are primarily for military users and contain detailed information on both IR's and VR's. The FLIP contains a description of these routes.

## Section 2. MTR ROUTE DESIGNATION CRITERIA

### 11-2-1. LIMITATIONS

a. Routes shall be limited to the minimum number necessary to support operational requirements as determined by the appropriate military major/type command.

b. To the extent practicable, routes shall be designed to accommodate the maximum number of users and activities on the same route.

### 11-2-2. ROUTE IDENTIFICATION

a. Routes shall have a designator composed of the prefix "IR" or "VR" followed by a number from the table in subparagraph e, indicating the FAA region in which the route's entry point is located. Alternate route segments established in accordance with paragraph 11-4-5 or paragraph 11-7-5 shall be identified by using the basic/principal route designator followed by a letter suffix; e.g., IR101A, IR101B, VR102A, VR102B.

b. Route numbers shall not be duplicated, regardless of whether they are IR or VR numbers. Assignment of route numbers shall be by the regional military representatives.

c. MTR's that include one or more segments above 1,500 feet (AGL) shall be identified by three number characters; e.g., IR206, VR207.

d. MTR's with no segment above 1,500 feet (AGL) shall be identified by four number characters; e.g., IR1206, VR1207.

e. Route number assignments shall be made from the following allocation:

**Route Number Assignments**

Region	MTR Numbers, One or More Seg- ments Above 1,500 Feet AGL	MTR Numbers, All Routes at or Below 1,500 Feet AGL
Southern	001 thru 099	1001 thru 1099
Southwest	100 thru 199	1100 thru 1199
Western-Pacific	200 thru 299	1200 thru 1299
	980 thru 999	1980 thru 1999
Northwest Mountain	300 thru 499	1300 thru 1499
Central	500 thru 599	1500 thru 1599
Great Lakes	600 thru 699	1600 thru 1699
Eastern	700 thru 799	1700 thru 1799
New England	800 thru 899	1800 thru 1899
Alaska	900 thru 979	1900 thru 1979

*TBL 11-2-1*

f. If a route is in development, the route's originator shall contact the appropriate military representative located in the FAA region in which the route commences to obtain a route number.

g. MTR's are one-way routes. If the route is to be flown in the opposite direction, a separate route designator shall be assigned.

## Section 3. PUBLICITY

### 11-3-1. INFORMATION TO THE PUBLIC

After routes are established, the DOD and the FAA shall acquaint the public with the description, location, and periods of use. As a minimum, the following is required:

a. The DOD shall publish all routes in the FLIP AP/1B and AP/3. FAA requests for copies shall be made in accordance with FAA Order 1720.23.

b. The FAA shall:

1. Post a route depiction chart in AFSS/FSSs' flight briefing areas and FSDO's.

2. Publicize the MTR program through letters to airmen and pilot meetings.

3. Develop and distribute appropriate aeronautical charts depicting MTR's.

4. Include a description of the MTR program in the AIM and the AIP along with reference to detailed aeronautical publications.

## Section 4. IR ROUTE DEFINITION

### 11-4-1. ROUTE WIDTH

Widths of route segments shall be defined by the military. In all cases, the route width shall be of sufficient size to contain all planned activities. For cartographical purposes, the standard route width shall be 5 NM.

### 11-4-2. ROUTE ALIGNMENT

Route alignment criteria shall be as follows:

a. All IR's to be flown at/below 1,500 feet AGL should be designed to permit aircraft flying the route to avoid charted, uncontrolled airports by 3 NM or 1,500 feet. Where it is impractical to comply with this criteria, procedures shall be established by the scheduling/originating activity to minimize conflict with airport traffic; i.e., identify volume and type traffic, highlight need for increased vigilance commensurate with situation, maintain liaison with airport owner/operator, include appropriate cautionary note in route description: "Avoid flight within 1,500 feet or 3 NM of airport when practicable," etc.

b. Subsequent charting of airports within 3 NM of an MTR may require route realignment to conform to the criteria established in subparagraph a.

c. Routes should be aligned to avoid Class D and Class B airspace.

d. During development of routes, consideration should be given to potential conflict with published and unpublished instrument procedures/routes.

e. Routes should be aligned so that disturbance to persons or property on the ground is minimized.

### 11-4-3. ALTITUDES

a. Altitudes shall be established for each route segment. Routes shall contain the minimum number of altitudes commensurate with mission requirements and may be specified singly, in blocks, or a range from which ATC assignment may be made. Minimum altitudes for each route segment shall be established by the military. Altitude information shall be reflected on FAA Form 7110-4 as follows:

1. IR's should depict the highest altitude in MSL terms. The lowest altitude may be depicted in either MSL or AGL terms.

2. An altitude block shall be depicted as the lowest altitude followed by a "B" followed by the highest altitude.

#### *EXAMPLE-*

*5 AGL B 20 MSL*

*40 MSL B 60 MSL*

*SFC B 50 MSL*

3. A range of altitudes from which ATC may assign a single altitude shall be depicted as the lowest altitude, in MSL terms, followed by a "-" followed by the highest altitude in MSL terms (when acceptable to the mission).

#### *EXAMPLE-*

*20 MSL-50 MSL*

b. Unless the route segment is clearly annotated, "for use in VMC conditions only," each route segment shall contain an altitude that is suitable for flight in IMC and can be used in the event of an aircraft systems failure. This altitude shall be referred to as the IFR altitude and may be contrary to 14 CFR 91.119 when specifically authorized by appropriate military authority. The IFR altitude shall always be depicted in MSL terms. In no case will flight operations be conducted at altitudes less than those specified in 14 CFR 91.177. In the absence of an established IFR altitude, the IFR altitude is the highest altitude designated for the route segment as depicted in the route description.

c. All altitudes shall be established by the military. The military may use other than FAA standards for establishing IFR altitudes for route segments.

d. When practical, the designated exit fix altitude shall be within an area of radio coverage. When it is determined that ATC impact or other constraints preclude the exit fix altitude being established within radio coverage, an altitude below radio coverage may be utilized provided procedures for routinely exiting the route; i.e., pre-coordinated clearances, stereo routes, and actions to be taken by the pilot in the event two-way communications are lost, are covered in a letter of agreement.



**11-4-4. RE-ENTRY SEGMENTS**

Consistent with ATC capabilities, routes may have re-entry segments. To the extent practicable, reentry segments should avoid ARTCC/CERAP boundaries.

**11-4-5. ALTERNATE ENTRY, EXIT, AND END POINTS**

a. Any point on the route may be identified as an alternate entry/exit/end point. Entry points must precede exit points on the routes/alternate routes with which they are associated.

b. Whenever a route is modified by designating alternate entry/exit/end points, the route segments associated with the alternate points shall be considered modifications to the basic/principal route and may be described and designated as alternate routes.

c. Any alternate route segments shall meet all of the requirements pertinent to the establishment of new routes.

**11-4-6. ROUTE REPORTING POINTS**

a. Unless otherwise specified in the letter of agreement, the NFDD, and the DOD FLIP AP/1B route description, exit points shall be mandatory reporting points.

b. Other mandatory reporting points may be established for ATC purposes. These shall be kept to those absolutely essential in providing IFR separation between the route user and other IFR traffic. These points shall be specified in the letter of agreement, as appropriate, and the route description.

**11-4-7. SPECIAL OPERATING PROCEDURES**

Special operating procedures may be imposed, but shall be held to the minimum required. These procedures may be applied on a route segment basis

and need not apply to the entire route. Such restrictions shall be a part of the narrative route description as published in the NFDD and DOD FLIP AP/1B (or AP/3). If ATC procedures are involved, they shall be included in the letter of agreement governing the use of the route.

**11-4-8. LOW ALTITUDE AIR-TO-AIR TRAINING (LOWAT)**

a. LOWAT shall be accomplished only on IR's specifically designated for this purpose.

b. The provisions for an equivalent level of safety for LOWAT training shall be contained in a letter of agreement between the ARTCC/CERAP and the military unit.

c. LOWAT maneuvers are not "classical intercepts," but allow for observation and analysis of an aerial attack, initiation of the appropriate defensive response, and continuation of the primary mission with minimal interruption. LOWAT training maneuvers conducted on IE's shall be limited to:

1. No more than a 90-degree turn will be performed on the IR.

2. LOWAT maneuvers will be terminated as soon as visual and/or radio contact is made by the defending aircraft.

3. Weather minimums on IE's at maneuvering altitudes shall be 1,500 feet from clouds and 3 miles flight visibility.

d. LOWAT training shall be limited to those aircraft with sophisticated operating airborne radar systems.

e. IE's designated for LOWAT will be coordinated on an individual basis, approved at FAA Washington Headquarters, published in DOD FLIP, and clearly identified as a designated LOWAT route.

## Section 5. IR COORDINATION

### 11-5-1. ESTABLISHING OR REVISING ROUTES

a. Military units having a requirement to establish or revise a route must have that requirement validated by the appropriate military major/type command. As a part of the validation process, a determination must be made that other alternatives have been explored; e.g., use of existing MOA's, restricted areas, or other routes. This determination shall be documented in writing and become a part of the route proposal.

b. All route requests or route amendments developed by the originating unit shall be submitted on FAA Form 7110-4 (see FIG 11-5-2 and FIG 11-5-3). A letter of transmittal shall contain sufficient information to allow each reviewing authority to adequately understand and evaluate the proposal/revision. For route revisions, complete FAA Form 7110-4 with only the changed/new data, route designator, and originating unit. Check the "modified" block.

c. All route proposals shall be illustrated on a current sectional chart (not required for revisions which do not effect route alignment) with routes depicted as follows:

1. Routes shall be depicted by lines defining the route widths.

2. Altitudes shall be depicted along each route segment and expressed in hundreds of feet AGL or MSL as appropriate. Altitude blocks or ranges shall be indicated by separating the altitudes with a "B" for blocks or a dash "-" for ranges. (Refer to 11-4-3.)

3. Each point/fix, including turn points, shall be identified by sequential alphabetical lettering in accordance with the direction of flight.

d. The originating unit shall coordinate the route proposal with other affected military organizations.

e. The ARTCC/CERAP in whose area the route originates shall be the focal point and coordinate with other ATC facilities.

f. A listing of all personnel and organizations coordinated with shall become a part of the route proposal.

g. Once the ARTCC/CERAP has concurred with an IR proposal, subsequent changes must be re-coordinated with the ARTCC/CERAP and documented regardless of the level at which the change was made.

h. Prior to submission for publication, the military shall conduct an operational flight evaluation of the entire route to ensure compatibility with obstacle clearance, navigation, communication, and special restriction requirements. Coordination with the appropriate ATC facilities is required.

i. Once ARTCC/CERAP proponent agreement has been reached, proposals shall be forwarded to the appropriate military major/type command headquarters for review and environmental certification.

j. If agreement between the proponent and the ATC facilities involved cannot be achieved after consideration of all feasible alternatives and compromises, the proponent shall request assistance from the appropriate military headquarters and the FAA regional military representative. A resolution shall then be sought at a meeting attended by the proponent, the ATC facilities involved, military major/type command headquarters representatives, the FAA regional headquarters, and the military representatives. Should a resolution not be achieved, the military headquarters representatives may, at that meeting, authorize the proponent to proceed with processing of a VR proposal in lieu of the disagreed IR.

k. Regional Review action: IR proposals shall be forwarded to the military representative at the FAA region in which the routes originate. The military representative shall review the proposals for compliance with this criteria, coordinate with other military service representatives, and then submit them to the FAA regional Air Traffic division.

1. The FAA regional air traffic division shall:

1. Coordinate all proposals with other interested FAA divisions.

2. Determine when proposals will increase the burden on civil users of the navigable airspace, and coordinate those proposals with the appropriate civil aviation user groups.

3. Approve or disapprove the proposal and notify the regional military representative, in writing, within 45 days of receipt of the original proposal.

m. The FAA regional air traffic division is the final approval authority for all IR proposals/revisions.

n. The block diagram below represents the normal coordination flow of a proposed IR.

#### Normal Coordination Flow of a Proposed IR

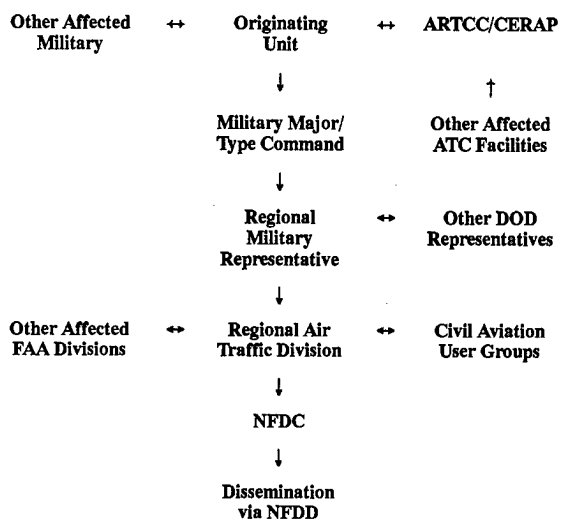


FIG 11-5-1

#### 11-5-2. PUBLICATION

a. The FAA regional air traffic division in whose area the route originates shall submit the approved

FAA Form 7110-4 to the National Flight Data Center (NFDC), with a copy to the appropriate military regional representative.

#### NOTE-

*Route descriptive data will normally be submitted 9 weeks prior to the requested/required airspace effective date. (See FAA Order 7031.20.)*

1. The NFDC shall issue the official, complete route description via the National Flight Data Digest (NFDD). It shall be published in the same format as FAA Form 7110-4.

2. The DOD FLIP Area Planning booklets, AP/1B or AP/3, as appropriate, shall be the official source of MTR descriptions for military users. It shall be published in the same format as FAA Form 7110-4.

b. ARTCC/CERAP's shall review IR data published in the NFDD for accuracy and inform the appropriate regional Air Traffic division whenever a disparity exists between that which was agreed to and that which was published.

c. Military originating activities shall review IR data published in the DOD FLIP AP/1B and AP/3 booklets and charts for accuracy and inform the appropriate regional military representative whenever a disparity exists between that which was submitted and that which was published.

d. Military originating activities and ARTCC/CERAP's shall ensure that IR data published in the DOD FLIP AP/1B and AP/3 booklets correlate with provisions contained in the letters of agreement governing the use of the route.

## Instructions for Completing FAA Form 7110-4, Military Training Route Data

**Provide a complete description of the route, including all the various tracks, as follows:**

1. **Basic Route.** The route from the en route altitude to the MTR and return to altitude.
  - a. Enter altitude(s) for each route segment, letter of all action points, NAVAID identification and type, and latitude/longitude.
  - b. Enter applicable special communications and/or reporting procedures in the altitude data column below the route segment where it applies.
2. **Alternate Entry Track.** An alternate track from en route altitude to a designated entry point to the MTR.
  - a. Enter the words, "Alternate entry track to PT\_" in altitude data column.
  - b. Enter, on the next line, altitude(s), points, NAVAID, and latitude/longitude data.
  - c. Enter applicable special communications and reporting procedures in the altitude data column.
3. **Alternate Exit Track.** An alternate track from a designated exit point to en route altitude.
  - a. Enter the words "Alternate exit track to PT\_" in altitude data column.
  - b. Enter, on the next line, altitude(s), points, NAVAID, and latitude/longitude data.
  - c. Enter applicable communications and reporting procedures in the altitude data column.
4. **Reentry track.** The track to be followed from a designated exit point to reenter the MTR at a designated entry point.
  - a. Enter the words "Reentry track from PT\_" in altitude data column.
  - b. Enter, on the next line, altitudes, points, NAVAID, and latitude/longitude data.
  - c. Enter applicable communications and reporting procedures in the altitude data column.
5. **Other/Routes.** Any other track/route established as part of the MTR.
  - a. Enter the identification of the track/route in the altitude data column; e.g., transition route, race track north, race track south, etc.

### Altitude Data Column:

1. Express all altitudes in hundreds of feet and identify as MSL or AGL; e.g., 50MSL, 10AGL.
2. Enter the altitude(s) for each route segment to be flown to the point in the adjacent column as follows:
  - a. A single altitude which must be used for the entry route segment; e.g., 50MSL.
  - b. A block of altitude within which all operations will be conducted. This consists of two altitudes separated by the letter "B"; e.g., 30AGLB80MSL.
  - c. A range of altitudes from which ATC will assign the altitude to be flown. This consists of two altitudes separated by a dash; e.g., 50MSL-80MSL.
  - d. An IFR altitude must be shown for each route segment. If the highest altitude established for the route segment is also the IFR altitude, no other entry is required. If the highest altitude is not the IFR altitude, enter a separate IFR altitude immediately after the route segment altitude(s) and enclose within parenthesis; e.g., 10MSL-20MSL (50MSL); 30MSL (50MSL).

**Point (PT) Column.** All action points published in the DOD FLIP AP/1B must be assigned a letter designator.

1. Identify the first 26 points by the letters A through Z; the second 26 points by the letters A through Z preceded by the letter A; e.g., AA, AB, AC; the third 26 points by the letters A through Z preceded by the letter B; e.g., BA, BB, BC.
2. Add a numerical suffix to the letter designator incrementally by one each time the point is reused; e.g., first time, P; second time, P-1; third time, P-2.

### Facility/Radial/Distance (FAC/RAD/DIS) Columns:

1. Enter in the facility column the three letter NAVAID identifier, followed by an asterisk and the DME of the following letter codes to identify the type of NAVAID. D - VOR/DME; T - TACAN; C - VORTAC; Via - VOR; R - NDB.
2. No entry is required in the radial/distance column. The FAA (NFDC) will compute the radial/distance information using the geographical coordinate values in the latitude/longitude column, and publish in the National Flight Data Digest (NFDD). DMAAC/NIMA will publish the NFDD data in the DOD FLIP AP/1B.

### Latitude/Longitude Columns:

1. Enter the latitude and longitude of navigation point in decimal format to the nearest tenth of a minute; e.g., 47°27.5N, 99°02.5W.
2. If the point is a NAVAID, enter the three letter identifier instead of the geographical coordinate values. (FAA/NFDC will use the geographical coordinate values for the NAVAID stored in its data base and publish in the NFDD. DMAAC/NIMA will use the FAA data for the FLIP AP/1B.)

FIG 11-5-2

Continued

SAMPLE FORMAT - NOT AN ACTUAL ROUTE

PAGE 1 OF 2

MILITARY TRAINING ROUTE DATA (Please type or print)						
ROUTE <input checked="" type="checkbox"/> ESTABLISHED  <input type="checkbox"/> MODIFIED	EFFECTIVE DATE (COMPATIBLE WITH DOD FLIP AP/18 CHARTING DATE) 20 October 88	ORIGINATING ACTIVITY (DESIGNATION AND ADDRESS) 120 FIG (ANG) Great Falls IAP, MT 59604		SCHEDULING ACTIVITY (DESIGNATION AND ADDRESS) 120 FIG/DOO (ANG) Great Falls IAP, MT 59604		
ROUTE DESIGNATION (ASSIGNED BY REG. MILITARY REPRESENTATIVE) IR-475	HOURS OF OPERATION (ENTER HOURS AND/OR DAYS. SPECIFY LOCAL OR GMT). 0900 - 1600 Local Wednesday - Sunday OT by NOTAM	AUTOVON NO.: 279-2200		AUTOVON NO.: 279-2200		
ROUTE DESCRIPTION						
NFDC USE	ALTITUDE DATA	POINT	FACILITY	RADIAL DISTANCE (NFDC USE)	LATITUDE	LONGITUDE
	Primary Entry Fix BIL 114 025					
	Descend 100MSL-130MSL direct to	A	BIL*C		45°10.0'N	108°20.0'W
	10AGL B 130MSL	B	SHR*C		44°41.4'N	108°21.1'W
	05AGL B 110MSL	C	SHR*C		44°38.8'N	107°54.0'W
	01AGL B 110MSL (120MSL)	D	SHR*C		44°43.0'N	107°33.0'W
	01AGL B 110MSL (120MSL)	E	SHR*C		44°52.0'N	107°41.6'W
	01AGL B 110MSL (120MSL)	F	SHR*C		45°01.2'N	107°59.4'W
	01AGL B 110MSL (120MSL)	G	SHR*C		45°10.0'N	107°35.9'W
	01AGL B 70MSL	H	SHR*C		45°12.5'N	107°05.5'W
	01AGL B 60MSL	I	SHR*C		44°57.4'N	106°33.2'W
	01AGL B 60MSL	J	SHR*C		44°50.0'N	106°09.5'W
	01AGL B 60MSL	K	SHR*C		44°49.9'N	105°52.0'W
	01AGL B 60MSL	L	SHR*C		45°05.3'N	105°50.0'W
	01AGL B 50MSL	M	SHR*C		45°12.1'N	106°07.0'W
	01AGL B 50MSL	N	SHR*C		45°24.0'N	106°32.5'W
	01AGL B 60MSL (Alternate Entry)	O	SHR*C		45°32.7'N	106°48.0'W
	01AGL B 60MSL	P	MLS*C		45°44.1'N	106°47.4'W
	01AGL B 60MSL	Q	MLS*C		45°59.5'N	106°45.5'W
	01AGL B 50MSL	R	MLS*C		46°08.3'N	106°33.9'W
	01AGL B 50MSL	S	MLS*C		46°08.0'N	106°17.9'W
	01AGL B 40MSL (Re-Entry Point)	T	MLS*C		45°55.0'N	106°01.0'W

FAA Form 7110-4 (6-79)

## Continued

<b>TERRAIN FOLLOWING OPERATIONS.</b> (EXPLAIN PROCEDURES TO BE FOLLOWED. IF APPROPRIATE, SHOW POINT TO POINT IN SEQUENTIAL ORDER; VFR OR IFR CRITERIA AND ALTITUDES; AND OTHER INFORMATION AS NECESSARY.)  VFR terrain following authorized from C to AC within published altitude blocks. IFR terrain following authorized H to P and Q to AC within published altitude blocks. When command directives/aircraft equipment preclude IFR terrain following and IMC is encountered, maintain IFR altitude for each segment to assure terrain/obstacle clearance. Entire route is designated mountainous terrain.					
<b>ROUTE WIDTH</b> (DESCRIBE THE WIDTH OF ALL ROUTES AND TRACKS SEGMENTS IN TERMS OF MILES EITHER SIDE OF TRACK. SPECIFY WHETHER LEFT OR RIGHT OF CENTERLINE.) 3NM L/R from A to C; 3NM L and 8NM R from C to E; 5NM L/R from E to G; 10NM L and 5NM R from G to Q; 5NM L/R from Q to T; 5NM L and 8NM R from T to X; 10NM L and 8NM R from X to Y; 15NM L and 10NM R from Y to Z; 16NM L/R from Z to AB; 5NM L/R from AB to AD; 3NM L/R from AD to AE					
<b>SPECIAL OPERATING PROCEDURES</b> (ENTER ALL SPECIAL PROCEDURES AND/OR REMARKS THAT ARE GENERAL IN NATURE AND NOT APPLICABLE TO ANY SPECIFIC ROUTE SEGMENT, INCLUDING THE FOLLOWING: (1) TURN RADIUS INSTRUCTIONS, IF REQUIRED; (2) TIE-IN FLIGHT SERVICE STATION LOCATION IDENTIFIER; (3) ALL PRIMARY AND ALTERNATE ENTRY POINTS; (4) ALL PRIMARY AND ALTERNATE EXIT POINTS.) 1) Tie-in FSS: Billings (NOTAM - BIL). 2) Primary entry A; Alternate entry O; Primary exit AE; Alternate exit V. 3) Aircraft entering at O should file for IR 475A. 4) Aircraft not cleared for Powder River A MOA will file for IR-475B, exiting IR-475 at V. 5) Maneuver Area Y to AC is within Powder River A MOA. Area authorized for LOWAT IAW FAAH 7610.4. Interceptor aircraft file for Powder River A MOA. MARSAs through "see and avoid" applies between aircraft on IR-475 and interceptor aircraft. VMC required for LOWAT. 6) Use caution for multiple power lines in vicinity of G and between P and Q. 7) Avoid overflight of Forest Service watch towers east of D, southeast of N and south-southwest of O. 8) Numerous ranches entire route, avoid low overflight of livestock. 9) Use caution for bird activity F to G and H to I primarily during morning and evening hours, Apr-May and Sep-Oct. 10) Re-entry not authorized unless scheduled. Pilots must adhere to entry times to assure separation from other aircraft on the route.					
ROUTE ORIGINATION		FLIGHT SERVICE STATIONS (FOR NFDG USE)			
FAA REGION NW Mountain	ARTCC Salt Lake				
<b>TYPED NAME AND SIGNATURE OF APPROVING OFFICIALS</b>					
DATE	OFFICE SYMBOL	ORIGINATING ACTIVITY <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur	DATE	OFFICE SYMBOL	AIR ROUTE TRAFFIC CONTROL CENTER <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur
DATE	OFFICE SYMBOL	MILITARY/MAJOR/TYPE COMMAND <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur	DATE	OFFICE SYMBOL	REGIONAL MILITARY REPRESENTATIVE <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur
DATE	OFFICE SYMBOL	REGIONAL REPRESENTATIVE <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur	DATE	OFFICE SYMBOL	REGIONAL AIR TRAFFIC DIVISION <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur

Continued

PAGE 2 OF 2

MILITARY TRAINING ROUTE DATA (Please type or print)						
ROUTE		EFFECTIVE DATE (COMPATIBLE WITH DOD FLIP AP/18 CHARTING DATE)	ORIGINATING ACTIVITY (DESIGNATION AND ADDRESS)		SCHEDULING ACTIVITY (DESIGNATION AND ADDRESS)	
<input checked="" type="checkbox"/> ESTABLISHED		20 October 1988				
<input type="checkbox"/> MODIFIED		HOURS OF OPERATION (ENTER HOURS AND/OR DAYS. SPECIFY LOCAL OR GMT).				
ROUTE DESIGNATION (ASSIGNED BY REG. MILITARY REPRESENTATIVE)			AUTOVON NO.:		AUTOVON NO.:	
IR-475						
ROUTE DESCRIPTION						
NFDC USE	ALTITUDE DATA	POINT	FACILITY	RADIAL DISTANCE (NFDC USE)	LATITUDE	LONGITUDE
	01AGL B 50MSL	U	MLS*C		45°57.5'N	105°42.5'W
	01AGL B 40MSL (Alternate Exit)	V	MLS*C		46°07.0'N	105°28.0'W
	01AGL B 40MSL	W	MLS*C		46°05.8'N	105°14.0'W
	01AGL B 40MSL	X	MLS*C		46°00.0'N	105°13.8'W
	01AGL B 175MSL	Y	MLS*C		45°54.6'N	105°13.6'W
	(Start Maneuver Area)					
	01AGL B 175MSL	Z	MLS*C		45°43.2'N	105°15.1'W
	01AGL B 175MSL	AA	MLS*C		45°34.0'N	105°04.2'W
	01AGL B 175MSL	AB	MLS*C		45°26.2'N	104°55.0'W
	01AGL B 175MSL	AC	MLS*C		45°18.0'N	105°24.5'W
	(End Maneuver Area)					
	50MSL B 70MSL (Exit Point to Re-Enter)	AD	MLS*C		45°15.5'N	105°33.9'W
	60MSL B 80MSL	AE	SHR*C		44°52.6'N	105°24.4'W
	Climbout 130MSL direct SHR 089 060					
	Re-Entry Track: Exit Point AD					
	60MSL direct to	AF	MLS*C		45°45.1'N	106°12.8'W
	Descend 01AGL B 40MSL direct to	T	MLS*C		45°55.0'N	106°01.0'W
	(Execute remainder of route)					

FAA Form 7110-4 (6-79)

## Continued

<b>TERRAIN FOLLOWING OPERATIONS. (EXPLAIN PROCEDURES TO BE FOLLOWED. IF APPROPRIATE, SHOW POINT TO POINT IN SEQUENTIAL ORDER; VFR OR IFR CRITERIA AND ALTITUDES; AND OTHER INFORMATION AS NECESSARY.)</b>					
<b>ROUTE WIDTH (DESCRIBE THE WIDTH OF ALL ROUTES AND TRACKS SEGMENTS IN TERMS OF MILES EITHER SIDE OF TRACK. SPECIFY WHETHER LEFT OR RIGHT OF CENTERLINE.)</b>					
<b>SPECIAL OPERATING PROCEDURES (ENTER ALL SPECIAL PROCEDURES AND/OR REMARKS THAT ARE GENERAL IN NATURE AND NOT APPLICABLE TO ANY SPECIFIC ROUTE SEGMENT, INCLUDING THE FOLLOWING: (1) TURN RADIUS INSTRUCTIONS, IF REQUIRED; (2) TIE-IN FLIGHT SERVICE STATION LOCATION IDENTIFIER; (3) ALL PRIMARY AND ALTERNATE ENTRY POINTS; (4) ALL PRIMARY AND ALTERNATE EXIT POINTS.)</b>					
11) Participating aircraft separation on IR-475, IR-475A, and IR-475B is MARSAs through restrictive scheduling. 12) Contact HQ SAC/DONA for MARSAs scheduling deconfliction with IR-472, 474, 478 480, 481, 483, 492, and 494. 13) Contact Denver Center as soon as practicable after passing AD for route exit on 338.2. 14) PMSV: Malmstrom - 239.8 and Ellsworth - 375.2					
<b>ROUTE ORIGINATOR:</b> FAA REGION      ARTCC		<b>FLIGHT SERVICE STATIONS (FOR NPDO USE)</b>			
<b>TYPED NAME AND SIGNATURE OF APPROVING OFFICIALS</b>					
DATE	OFFICE SYMBOL	ORIGINATING ACTIVITY <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur	DATE	OFFICE SYMBOL	AIR ROUTE TRAFFIC CONTROL CENTER <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur
DATE	OFFICE SYMBOL	MILITARY/MAJOR/TYPE COMMAND <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur	DATE	OFFICE SYMBOL	REGIONAL MILITARY REPRESENTATIVE <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur
DATE	OFFICE SYMBOL	REGIONAL REPRESENTATIVE <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur	DATE	OFFICE SYMBOL	REGIONAL AIR TRAFFIC DIVISION <input type="checkbox"/> Concur <input type="checkbox"/> Nonconcur

FIG 11-5-3



**11-5-3. ROUTE REVIEW**

a. Scheduling units shall maintain records of IR usage in terms of individual aircraft operations (sorties) for the preceding calendar year.

b. ARTCC/CERAP's shall maintain usage records of all IR's in accordance with FAA Order 7210.3, Facility Operations and Administration, for the preceding 12 months.

c. Joint FAA/DOD review conferences shall be convened annually as soon as practicable after January 1 at the FAA regional level to review all

IR's for DOD requirements and their aeronautical impact.

**11-5-4. EFFECTIVE DATE**

a. New routes shall not become effective until published in the DOD FLIP Area Planning booklets, AP/1B or AP/3, as appropriate.

b. Revisions/corrections to existing routes shall not become effective until published in the DOD FLIP AP/1B or AP/3 booklets, or published in a DOD Planning Change Notice (PCN) and issued as a Flight Data Center (FDC) NOTAM.

## Section 6. IR ROUTE USE

### 11-6-1. SCHEDULING

a. Each IR route shall have a designated military unit responsible for scheduling all military flights intending to use the IR route. If the designated military unit does not have a continuous point of contact; i.e., a unit subject to deployment or a unit not available during normal work days (ANG unit working Wednesday-Sunday), then an alternate scheduling agency shall be designated. All flights on the IR route will be scheduled through the primary or alternate scheduling agency.

b. The scheduling activity shall confirm on a daily basis (to the extent practicable, prior to 2400 hours) with the tie-in AFSS/FSS of the planned utilization of the route. Unless otherwise agreed to, such scheduling shall be accomplished at least 2 hours prior to use. Scheduling agencies shall provide an hourly schedule for each route which includes route number, aircraft type and number, proposed entry/exit time, and altitude. Scheduling agencies should make every effort to pass changes as soon as possible to the tie-in AFSS/FSS when a particular route is closed or a scheduled aircraft cancels.

#### **EXAMPLE-**

IR101 0900-1000 2/F-14  
0915-1000  
SFC B-50 MSL  
1000-1100 None  
1100-1200 4/F-14  
1105-1150  
20 MSL-40 MSL

#### **EXAMPLE-**

IR102 0900-1000 1/T-38  
0902-0944  
30 MSL-40 MSL  
1000-1100 1/F-14  
1000-1015  
SFC B-50 MSL  
1100-1200 None

c. HQ ACC MASMS, Offutt AFB, Nebraska, is the central scheduling activity responsible for scheduling all ACC IR's. ACC MASMS shall transmit the IR schedule to the appropriate ARTCC/CERAP's at least 24 hours prior to route usage. The ARTCC/CERAP controlling the primary route entry point shall re-transmit the

schedule via NADIN to the tie-in AFSS/FSS's whose flight plan area is located within 100 NM of the affected IR. Any changes to the ACC IR schedule shall be transmitted to ARTCC/CERAP by MASMS at least 3 hours prior to route activation.

#### **NOTE-**

*Some areas require extension of the 100 NM rule to ensure complete geographical coverage. Those affected FSS/AFSS's will be identified and appropriate adjustments made.*

d. For special missions such as ORI, IR scheduling may occur well in advance of route use. In such cases, the scheduling unit may require a written confirmation prior to actual route utilization by the using unit.

### 11-6-2. LETTERS OF AGREEMENT- IR

a. A letter of agreement, when required, shall be concluded between the military scheduling activity and the ARTCC/CERAP in whose area the IR originates. This ARTCC/CERAP responsibility may be performed by any affected ATC facility if so coordinated and agreed to. The letter of agreement, governing special conditions of use and procedures, shall be authorized (signed) by the affected ATC facility air traffic manager and the military representatives of the originating/scheduling activity.

b. Each IR will have a designated military office responsible for scheduling all military flights, regardless of command/service, for use of the IR. IR's shall not be used for military training unless scheduled. When the use of an IR is requested by a military user, the military scheduling activity has the responsibility for scheduling the flight and advising the user of the operational procedures contained in the letter of agreement.

### 11-6-3. TIE-IN FLIGHT SERVICE STATION

The tie-in AFSS/FSS for the scheduling activity is specified in FAA Order 7110.10. Tie-in AFSS/FSS's shall be on the ARTCC/CERAP distribution list to receive copies and changes to all letters of agreement concerning IR's.

#### 11-6-4. ADVISORY AND OPERATIONAL STATUS MESSAGES

When requested by the scheduling activity, ATC may relay advisory/operational messages to participating aircraft.

#### 11-6-5. FLIGHT PLAN REQUIREMENTS

a. All IR operations shall be conducted on IFR flight plans or approved altitude reservations.

b. Unless otherwise agreed to, flight plans shall be filed in accordance with the following format:

1. The entry fix in terms of fix/radial/distance (FRD), route designator, and exit fix in terms of FRD followed by the balance of the route of flight. The entry and exit fix must be associated with a fix on the route, and the entry fix must be prior to the exit fix on the route.

##### EXAMPLE-

TNP355020.IR252.PKE107012

2. Routes having re-entries for a single Strategic Training Range (STR) site shall contain the entry or alternate entry fix in terms of FRD, the route designator followed immediately by a plus sign (+), either the letter "R" (1st STR site) or "S" (2nd STR site), and a digit indicating the number of re-entries.

##### EXAMPLE-

(FRD) IR240+R2 (FRD)

(FRD) IR240+S3 (FRD)

3. Routes having re-entries for two STR sites shall contain the entry/alternate fix in terms of FRD, the route designator followed immediately by a plus sign (+), the letter "R" and a digit indicating the number of re-entries on the first STR site, immediately followed by a second plus sign (+), the letter "S" and a digit indicating the number of re-entries on the second STR site.

##### EXAMPLE-

(FRD) IR240+R2+S3 (FRD)

4. STR routes must be entered and exited at the respective primary fix. Alternate STR routes must be entered/exited at the alternate entry/exit fix. The routes must be identified by an individual name.

##### EXAMPLE-

(FRD) IR240+R2 (FRD)

(Primary)

(FRD) IR240A+R2 (FRD)

(Alternate)

#### 5. Remarks.

(a) The remarks portion of a flight plan containing an IR shall be consolidated into groups containing the following data if appropriate. Information contained in the route of flight section of the military flight plan need not be repeated in the remarks section.

##### (1) Group One.

[a] IR designator; e.g, IR101.

[b] The letter "E" and a four-digit time group indicating the entry/alternate entry time.

[c] The letter "X" and a four-digit time group indicating the exit/alternate exit time.

##### EXAMPLE-

IR101E1617X1815

IR102E1802X1845

(2) Group Two. Any other remarks not contained in Group One may be separated by blank spaces, dashes, or slant bars for the sake of clarity.

(b) Group One remarks shall be formatted in consecutive sequence without blank spaces in accordance with the following:

(1) Flight plans where the entire route of flight remains within the ARTCC's area in which the flight departed:

[a] Clear weather symbol (○).

[b] IR designator.

[c] Group One remarks.

[d] Group Two remarks if appropriate.

##### EXAMPLE-

○IR101E1617X1815

MARSA . . . (etc.)

(2) Flight plans where the route of flight enters more than one ARTCC's area and an IR is completed before the aircraft exits the ARTCC's area in which the flight departed:

[a] Overcast weather symbol (⊕).

[b] IR designator.

[c] Group One remarks.

[d] Clear weather symbol (○).

[e] Group Two remarks if appropriate.

**EXAMPLE-**

⊕ IR101E1802X18450AR20  
HFAKR1233 . . . (etc.)

(3) Flight plans where the route of flight enters more than one ARTCC's area and an IR is completed after the aircraft has exited the ARTCC's area where the aircraft departed:

[a] Clear weather symbol (○).

[b] IR designator.

[c] Group One remarks.

[d] Group Two remarks if appropriate.

**EXAMPLE-**

○ IR101E1802X1845  
MARSA . . . (etc.)

(4) Flight plans where the route of flight enters more than one ARTCC's area and an IR is completed after the aircraft has exited the ARTCC's area where the aircraft departed, and the Group Two remarks are concluded before exiting the ARTCC's area in which the flight departed.

[a] Overcast weather symbol (⊕).

[b] Group Two remarks.

[c] Clear weather symbol (○).

[d] IR designator.

[e] Group One remarks.

**EXAMPLE-**

⊕ AR20HFAKR1233○IR101E  
1802X1845

### 11-6-6. IR USE DENIAL

ATC facilities should not deny the use of IR's. ATC delays may be imposed when conditions preclude route usage as scheduled. When delays are anticipated, ATC facilities shall advise the pilot/scheduling unit of the expected delay and the reasons for the delay.

### 11-6-7. ROUTE ADHERENCE

Pilots shall be responsible for:

a. Remaining within the confines of the published route width and altitude.

b. Obtaining a specific ATC entry clearance from the appropriate ATC facility prior to entering the IR.

c. Unless otherwise agreed to in a letter of agreement, obtaining an IFR ATC exit clearance prior to exiting the IR.

d. Adhering to the provisions of 14 CFR 91.119 (Minimum Safe Altitude, General). Routes may be flown IFR contrary to 14 CFR 91.177 (Minimum Altitude for IFR Operations) when specifically authorized by the appropriate military authority.

### 11-6-8. SPEED AUTHORIZATION

Flight shall be conducted at the minimum speed compatible with mission requirements. When exiting an MTR below 10,000 feet MSL, the flight shall comply with 14 CFR 91.117 (aircraft speed) or the current authorization granted to DOD.

### 11-6-9. ENTRY/EXIT PROCEDURES

All IR entries and exits shall be accomplished at published entry and exit points, or published alternate entry and exit points, unless the pilot amends/cancels his IFR flight plan.

### 11-6-10. COMMUNICATION FAILURE

Unless otherwise covered in a letter of agreement, each pilot who has a two-way radio communications failure when operating on an IR (between the entry and exit point) shall comply as follows:

a. VFR Conditions. If the failure occurs in VFR conditions, or if VFR conditions are encountered after the failure, each pilot shall continue the flight VFR and land as soon as practical. (14 CFR 91.127b /DOD IFR Supplement.)

b. IFR Conditions. If the failure occurs in IFR conditions, or if subparagraph a above cannot be complied with, each pilot shall:

1. Maintain to the exit/alternate exit point the higher of the following:

(a) The minimum IFR altitude for each of the remaining route segment(s).

(b) The highest altitude assigned in the last ATC clearance.

2. Depart the exit/alternate exit point at the altitude determined in 1 above; then climb/descend to the altitude filed in the flight plan for the remainder of the flight.

#### **11-6-11. LOST COMMUNICATIONS TRANSPONDER OPERATIONS**

Refer to transponder procedures in DOD FLIP, IFR Supplement and the AIM.

#### **11-6-12. SEPARATION OF PARTICIPATING AIRCRAFT**

a. To the extent practicable, IR's should be established for standard ATC services and approved separation applied between individual aircraft.

b. If the provisions of subparagraph a cannot be applied because of mission requirements, crossing

routes, or ATC limitations, routes may be designated for MARSA operations. The procedures for applying MARSA shall be contained in the letter of agreement between the scheduling unit and the appropriate ATC facility. Specific MARSA operating procedures shall be contained in the DOD FLIP AP/1B and AP/3 narrative description of the route.

#### **NOTE-**

*ATC facilities' sole responsibility concerning the use of MARSA is to provide separation between participating and nonparticipating aircraft. (See paragraph 1-48, Use of MARSA.)*

c. When MARSA is provided through route scheduling and circumstances prevent the pilot from entering the route within established time limits, it shall be the responsibility of the pilot to inform the ATC facility and advise his intentions.

## Section 7. VR ROUTE DEFINITION

### 11-7-1. ROUTE WIDTH

Widths of route segments shall be defined by the military. In all cases, the route width shall be of sufficient size to contain all planned activities. For cartographical purposes, the standard route width shall be 5 NM.

### 11-7-2. ROUTE ALIGNMENT

Route alignment criteria shall be as follows:

a. Route widths shall be designed to avoid Class B and C airspace areas. Additionally, route widths shall be designed to avoid Class D and E surface areas below 3,000 feet AGL.

b. All VR's to be flown at/below 1,500 feet AGL should be designed to permit aircraft flying the route to avoid charted, uncontrolled airports by 3 NM or 1,500 feet. Where it is impractical to comply with this criteria, procedures shall be established by the scheduling/originating agency to minimize conflict with airport traffic; i.e., identify volume and type traffic, highlight need for increased vigilance commensurate with the situation, maintain liaison with airport owner/operator, include appropriate cautionary note in route description: "Avoid flight within 1,500 feet or 3 NM of airport, when practicable," etc.

c. Subsequent charting of airports within 3 NM of an MTR may require route alignment to conform to the criteria established in subparagraph b.

d. Routes should be aligned to avoid Class B airspace.

e. During development of routes, consideration should be given to potential conflict with published and unpublished instrument procedures/routes.

f. Routes should be aligned so that disturbance to persons or property on the ground is minimized.

### 11-7-3. ALTITUDES

Altitudes shall be established for each route segment. Routes shall contain the minimum number of altitudes commensurate with mission requirements and may be specified singly, or in block. Minimum altitudes for each route segment shall be established by the military. Altitude information shall be reflected on FAA Form 7110-4 as follows:

a. The lowest altitude may be depicted in either MSL or AGL terms. The highest altitudes may be depicted in AGL terms at 1,500 feet and below, but all altitudes above 1,500 feet AGL shall be depicted in MSL terms.

b. An altitude block shall be depicted as the lowest altitude, followed by a "B," followed by the highest altitude.

#### EXAMPLE-

SFC B 50 MSL

4 MSL B 15 MSL

SFC B 15 AGL

c. All altitudes shall be established by the military. In no case will operations be conducted at altitudes less than those specified in 14 CFR 91.119.

### 11-7-4. ROUTE ENTRY AND EXIT POINTS

Route entry and exit points should be compatible with ATC requirements for operating IFR to and from the route.

### 11-7-5. ALTERNATE ENTRY/EXIT/END POINTS

a. Any point on the route may be identified as an alternate entry/exit/end point. Entry points must precede exit points on the routes/alternate routes with which they are associated. Additionally, compatibility with ATC requirements for operating IFR to/from the route shall be considered.

b. Whenever a route is modified by designating alternate entry/exit/end points, the route segments associated with the alternate points shall be considered modifications to the basic/principal route and may be described and designated as alternate routes.

c. Any alternate route segments shall meet all of the requirements pertinent to the establishment of new routes.

### 11-7-6. SPECIAL OPERATING PROCEDURES

Special operating procedures may be imposed but shall be held to the minimum required. These procedures may be applied on a route segment basis and need not apply to the entire route. Such procedures shall be a part of the narrative route description as published in the NFDD and the DOD FLIP AP/1B and AP/3.

## Section 8. VR COORDINATION

### 11-8-1. ESTABLISHING OR REVISING ROUTES

a. Military activities may request establishment of a VR above 1,500 feet AGL when:

1. A determination has been made by appropriate military headquarters that other alternatives have been explored; e.g., use of existing IR's, existing MOA's, restricted areas, or other routes; and

2. An IR request cannot be approved or an established IR has been proven to be unsatisfactory and has been so documented by the route proponent and respective ATC facility; and

3. The requirement has been validated by the appropriate military major/type command headquarters and documented in writing. This determination shall become part of the route proposal.

b. Military activities establishing routes to be flown entirely at or below 1,500 feet AGL and in visual meteorological conditions need not attempt to establish an IR as outlined in subparagraph a2.

c. Route proposals shall be:

1. Coordinated with other affected military organizations.

2. Operationally flight-evaluated for the entire route to ensure compatibility with obstacle clearance, navigability, etc.

3. Forwarded to the appropriate military major/type command headquarters for approval or disapproval and environmental certification.

d. Following approval, the military headquarters shall forward the proposal to the military representative at the FAA region in which the route originates. All route requests or route amendments shall be submitted on FAA Form 7110-4 (FIG 11-5-3).

e. The military representative shall review the proposals for compliance with this criteria, coordinate with other representatives, and then submit them to the FAA regional air traffic division.

f. The FAA regional air traffic divisions shall:

1. Review documentation associated with route proposals.

2. Coordinate all proposals with other interested FAA divisions.

3. Determine if further actions may feasibly result in future agreement on use of the associated IR route.

4. Determine when proposals will increase the burden on civil users of the navigable airspace, and coordinate those proposals with the appropriate civil aviation user groups.

5. Notify the regional military representatives, in writing, of their findings within 45 days of receipt of the original proposal.

g. Final approval authority for the establishment of VR's rests with the appropriate military major/type command headquarters.

h. All route proposals shall be illustrated on a current sectional chart (not required for revisions which do not effect route alignment) with the routes depicted as follows:

1. Lines defining the route widths.

2. Altitudes along each route segment expressed in hundreds of feet AGL or MSL, as appropriate. Altitude blocks shall be indicated by separating the altitudes in accordance with paragraph 11-7-3.

3. Each point/fix, including turn points, shall be identified by sequential alphabetical lettering.

### 11-8-2. PUBLICATION

a. The FAA regional air traffic division in whose area the route originates shall submit the approved FAA Form 7110-4 to the NFDC, with a copy to the appropriate regional military representative.

#### NOTE-

*Route descriptive data will normally be submitted 9 weeks prior to the requested/required airspace effective date. (See FAA Order 7031.20.)*

1. The NFDC shall issue the official, complete route description via the National Flight Data Digest (NFDD). It shall be published in the same format as FAA Form 7110-4.

2. The DOD FLIP area planning booklets, AP/1B or AP/3, as appropriate, shall be the official source of MTR descriptions for military users. It shall be published in the same format as FAA Form 7110-4.

b. Military originating activities shall review VR data published in the DOD FLIP AP/1B and AP/3 booklets and charts for accuracy and inform the appropriate regional military representative whenever a disparity exists between that which was submitted and that which was published.

#### **11-8-3. ROUTE REVIEW**

a. Scheduling units shall maintain records of VR usage in terms of individual aircraft operations (sorties) for the preceding calendar year.

b. Joint FAA/DOD review conferences shall be convened annually as soon as practicable after January 1 at the FAA regional level to review all VR's for DOD requirements and their aeronautical impact.

#### **11-8-4. EFFECTIVE DATE**

a. New routes shall not become effective until published in the DOD FLIP area planning booklets, AP/1B or AP/3 as appropriate.

b. Revisions/corrections to existing routes shall not become effective until published in the DOD FLIP AP/1B or AP/3 booklets, or published in a DOD Planning Change Notice (PCN) and issued as a Flight Data Center (FDC) NOTAM.



## Section 9. VR ROUTE USE

### 11-9-1. SCHEDULING

a. Each VR route shall have a designated military unit responsible for scheduling all military flights intending to use the VR route. If the designated military unit does not have a continuous point of contact; i.e., a unit subject to deployment or a unit not available during normal work days (ANG unit working Wednesday-Sunday), then an alternate scheduling agency shall be designated. All flights on the VR route will be scheduled through the primary or alternate scheduling agency.

b. The scheduling activity shall confirm on a daily basis (to the extent practicable, prior to 2400 hours) with the tie-in AFSS/FSS of the planned utilization of the route. Unless otherwise agreed, such scheduling shall be accomplished at least 2 hours prior to use. Scheduling agencies shall provide an hourly schedule for each route which includes route number, aircraft type and number, proposed entry/exit time, and altitude. Scheduling agencies should make every effort to pass changes as soon as possible to the tie-in AFSS/FSS when a particular route is closed or a scheduled aircraft cancels.

#### EXAMPLE-

VR101 0900-1000 2/F-14  
0915-1000  
SFC B-50 MSL  
1000-1100 None  
1100-1200 4/F-14  
1105-1150  
20 MSL-40 MSL  
VR102 0900-1000 1/T-38  
0902-0944  
30 MSL-40 MSL  
1000-1100 1/F-14  
1000-1015  
SFC B-50 MSL  
1100-1200 None

### 11-9-2. COMPLIANCE

It is the responsibility of the scheduling activity to ensure that all VR users are knowledgeable of the

respective route procedures. Individual users are responsible for compliance.

### 11-9-3. TIE-IN FLIGHT SERVICE STATION

The AFSS/FSS handling the flight planning function for the military base where the scheduling unit is located is normally the tie-in AFSS/FSS in accordance with FAA Order 7110.10. Tie-in AFSS/FSS's shall be on the center distribution list to receive copies of, and changes to, all letters of agreement concerning VR's for which they have been designated as the tie-in AFSS/FSS.

### 11-9-4. MONITOR 255.4 MHZ

Pilots should monitor 255.4 MHz while on VR's when it is not detrimental to the mission accomplishment. This does not preclude the use of tactical or discrete frequencies.

### 11-9-5. FLIGHT PLAN REQUIREMENTS

a. Pilots departing on IFR clearances to fly VR's are required to file to the fix/radial/distance of their entry/alternate entry point of the route.

b. Pilots transitioning to IFR upon exiting the VR are required to have on file a previously filed IFR flight plan from the appropriate fix/radial/distance of their exit point.

#### NOTE-

*Composite IFR-VFR-IFR flight plans may be filed with the appropriate FSS. Stereotype flight plans could be an advantage to flight planning.*

### 11-9-6. ROUTE ADHERENCE

Pilots of flights on VR's shall be responsible for remaining within the lateral and vertical confines of the route.

### 11-9-7. SPEED AUTHORIZATION

Flights shall be conducted at the minimum speed compatible with mission requirements. When exiting an MTR below 10,000 feet MSL, the flight shall comply with 14 CFR 91.117 (aircraft speed) or current authorization issued to DOD. (See Appendix 18.)

**11-9-8. WEATHER MINIMUMS**

Operations on the route shall be conducted only when the weather is at or above VFR minima, except that:

- a. Flight visibility shall be 5 miles or more; and

- b. Flights shall not be conducted below a ceiling of less than 3,000 feet AGL.

**11-9-9. TRANSPONDER PROCEDURES**

Pilots of aircraft operating on a VR route will adjust their transponder to code 4000 unless otherwise assigned by ATC.

## **Chapter 12. SPECIAL MILITARY FLIGHTS AND OPERATIONS**

### **Section 1. NIGHT WATCH**

#### **12-1-1. APPLICATIONS**

The National Airborne Operations Center (NAOC) is a special military operation named "Night Watch." The remarks section of the flight plan will contain the term "NAOC" pronounced "nay ock" when special handling is requested. The term "NAOC" will not be part of the call sign but can be used when the aircraft is airborne to indicate a request for special handling. When NAOC appears in the remarks section of the flight plan, radar information shall be forwarded in accordance with paragraph 12-3-3.

#### **12-1-2. OPERATIONS**

Operations in this category are as follows:

a. Practice Exercise. An exercise conducted at random for proficiency training.

b. Planned Exercise. An exercise with advance notification as to date and probable departure forwarded to the appropriate air traffic control terminal and en route facility.

#### **12-1-3. CLASSIFICATION**

Although the specific information contained in these instructions is not classified, the purpose and status of the operation to which it relates are classified as secret information.

## **Section 2. USSTRATCOM ATTACK COMMAND AND CONTROL SYSTEM (SCACS) AIRCRAFT OPERATIONS**

### **12-2-1. SCACS AIRCRAFT**

The USSTRATCOM Airborne Command Post (STRAT ABNCP) and Take Charge and Move Out (TACAMO) aircraft operate continuously in areas that have been coordinated with appropriate centers. When the SCACS aircraft are launched, they will proceed from the launch base or daily orbit area to a pre-designated SCACS area. The system is exercised approximately four (4) times each month for STRAT ABNCP and daily for TACAMO.

### **12-2-2. LAUNCHING OF POST ATTACK COMMAND AND CONTROL SYSTEM (PACCS) AIRCRAFT**

a. OLYMPIC SHOT - Unclassified name used to notify ATC facilities and NORAD of launching of SCACS aircraft under emergency conditions. Emergency launch of the SCACS aircraft may occur prior to, or in conjunction with, the launch of alert aircraft (Bust Out).

b. GIANT SHOT - Unclassified name used to notify ATC facilities and NORAD of launching of SCACS aircraft under training conditions. Notice to concerned ATC facilities will be made prior to planned launch. ACC/AMC units are responsible

for maintaining current flight plans on file at ATC facilities.

### **12-2-3. OPERATIONS ON AN ALTRV**

SCACS aircraft will operate on an ALTRV provided the orbit areas have been coordinated and approved by the ARTCC/CERAP concerned. When necessary, pilots will accept a clearance or radar vector to any point that will not result in placing the aircraft outside the orbit pattern perimeter.

### **12-2-4. CLASSIFICATION**

Although the specific information contained in these instructions is not classified, the purpose and status of the operation to which it relates are classified as secret information.

### **12-2-5. SCACS LAUNCH SCHEDULE**

Headquarters ACC and Commander USSTRATCOM Wing One will furnish CARF with a quarterly SCACS launch schedule and monthly ALTRV request, and CARF will issue a stationary altitude reservation approval to the appropriate ARTCC/CERAP's and military addressees.

## Section 3. OTHER USSTRATCOM CODED FLIGHTS

### 12-3-1. BUST OUT

The name of a USSTRATCOM operation used to notify ATC facilities and NORAD of the No-Notice launch of the USSTRATCOM positive control force, dispersing reconnaissance aircraft, and associated tankers. Additional information regarding this operation may be located in secure files of the ARTCC/CERAP's concerned.

### 12-3-2. BUGGY RIDE

The term is used to notify FAA facilities of the need for expeditious departure from a ACC/AMC base due to a civil disturbance or disaster. Particular aircraft with their associated tankers may, for reasons of safety and survival, need an immediate departure. It is important to ensure that the strike force remains intact. The term "Buggy Ride" will not appear in any flight plan but will be transmitted to the appropriate ATC facilities via base operations at the time the aircraft commences taxi.

### 12-3-3. RADAR IDENTIFICATION OF USSTRATCOM EMERGENCY WAR ORDER (EWO) FLIGHTS

FAA air traffic control facilities shall provide radar identification on USSTRATCOM EWO aircraft (identified by appropriate USSTRATCOM authority) as follows:

a. During peacetime, the radar identification function on USSTRATCOM EWO aircraft to air defense facilities shall be subordinate to the control of air traffic.

b. The FAA radar range scale shall not be expanded beyond the range normally used for air

traffic control purposes in order to provide radar identification.

c. Where FAA radar coverage overlaps air defense radar coverage, use the Aerospace Defense Command aircraft movement information service (AMIS) or liaison circuits, where available, to forward radar identification on USSTRATCOM EWO aircraft to air defense facilities in lieu of a separate landline.

d. Separate landlines may be installed to provide radar identification hand-offs on USSTRATCOM EWO aircraft to air defense facilities if no alternative means of communication is available, except that landlines shall not be installed at those locations where FAA and air defense radar coverage does not overlap.

e. Where a separate landline is installed, provide an ON/OFF switch in the air traffic control facility. Retain the switch in the OFF position until informed by the appropriate USSTRATCOM authority that a USSTRATCOM EWO mission is to be executed.

f. Where necessary, supplementary procedures to provide radar identification on USSTRATCOM EWO aircraft to air defense facilities may be developed at a local level.

#### NOTE-

*The implementation and continuation of this service is dependent upon joint USAF/FAA regional evaluation of the capability of each selected air base complex to conform to the conditions specified above and upon USAF funding for installation and maintenance of separate landlines where required.*

## Section 4. NUCLEAR ACCIDENTS/SAMPLING

### 12-4-1. "FLYNET" FLIGHTS, NUCLEAR EMERGENCY TEAMS

The Defense Nuclear Agency (DNA), a Department of Defense organization, and the Department of Energy have established Nuclear Emergency Teams throughout the United States. The code name "Flynet" indicates that an aircraft is transporting a Nuclear Emergency Team or a Disaster Response Team to an accident involving chemical agents or biological research materials. These teams are on call around-the-clock to proceed to any location within their areas of responsibility, and it is in the public interest that they reach their destination as rapidly as possible. The following procedures apply:

a. The code name "Flynet" will be included in the remarks portion of the flight plans. Civil as well as military aircraft will be used to airlift these teams.

b. ATC personnel shall make every effort to expedite the movement of "Flynet" aircraft.

### 12-4-2. NUCLEAR WEAPON ACCIDENTS ("BROKEN ARROW")

a. The affected military installation (usually the Base Command Post) shall notify the ARTCC/CERAP of the following in the event of a "Broken Arrow":

1. State the size of the predicted hazardous area and whether the airport is closed to normal traffic.

2. State if there is any intent to evacuate base aircraft by use of "Flush," "Buggy Ride," or other procedures.

3. State the expected duration of the emergency.

4. Advise the ARTCC/CERAP when the emergency is terminated.

b. Upon receipt of notification of a "Broken Arrow," the ARTCC/CERAP shall:

1. Clear the predicted hazardous area of over-flying IFR traffic; land or divert terminating traffic as requested by the military.

2. Coordinate with the affected terminal and flight service facilities to insure that they have been made aware of the situation and possible actions to be taken.

3. Issue a NOTAM for the benefit of VFR operators as security conditions permit.

4. If the situation warrants, establish a temporary flight restriction area in accordance with 14 CFR 91.137.

5. Expedite the arrival of "Flynet" aircraft.

6. Expedite the departure and arrival of aeromedical aircraft and any other aircraft specified by the military.

### 12-4-3. ATMOSPHERIC SAMPLING FOR NUCLEAR CONTAMINATION

Following a foreign nuclear weapons test, a planned aerial sampling schedule is established by the USAF. Although sampler aircraft are flight planned to the suspected atmospheric area of nuclear contamination, the aircraft are likely to require altitude and route changes which cannot be anticipated prior to departure. The purpose of these altitude and route changes is to permit direct contact and sampling of the "cloud" debris whose exact location and altitude distribution cannot be accurately predicted. To afford those operations optimum flexibility during profile, the following procedures are applicable:

a. Aircraft Identification. USAF aircraft engaged in aerial sampling missions shall use the call sign "SAMP" followed by the last three digits of the aircraft's serial number; e.g., SAMP 361, during voice communications and IFR flight plan filing.

b. USAF Technical Application Center (AFTAC) shall:

1. Advise the ATCSCC (ATO-200), via telephone or teletype, of planned aerial sampling missions at least 4 hours prior to the proposed time of departure. The advanced information should consist of:

(a) Aircraft identification.

(b) Departure point.

(c) Proposed departure time.

(d) Flight planned route and altitude.

**NOTE-**

*This advanced information does not constitute the filing of an IFR flight plan. Flight plans shall be filed in accordance with procedures outlined in pertinent documents.*

2. Provide the FAA, Office of Environment and Energy, Technology Division, AEE-100, with nuclear debris information obtained from "sampler" aircraft.

c. AEE-100 shall:

1. Prepare nuclear debris reports, if appropriate, based on the information received from AFTAC and other sources, and

2. Forward the nuclear debris report to the ATCSCC for distribution to user groups.

d. ATO-200 shall:

1. Advise the concerned ATC facilities of planned aerial sampling activities (subparagraph b1).

2. Issue the nuclear debris report as an ATC advisory message to all user groups.

3. Monitor the ATC handling of the aerial sampling missions and report any impact/problem to Air Traffic Operations, ATO-1.

e. Air traffic control facilities shall:

1. Provide special handling to aircraft engaged in aerial sampling missions.

2. Honor in-flight clearance requests for altitude and route changes to the maximum extent possible. If necessary, other IFR traffic may be re-cleared so that requests by sampler aircraft are honored.

**NOTE-**

*In no case shall the separation standards outlined in the Air Traffic Control Order, 7110.65, be compromised.*

3. Report any impact/problems resulting from the aerial sampling mission to ATO-200.

**NOTE-**

*Controller personnel will not receive nuclear debris information from aircraft engaged in sampling missions.*

## Section 5. NAVY CODED FLIGHTS

### 12-5-1. NAVY "ECHO ITEM" MISSIONS

"Echo Item" flights are active antisubmarine warfare (ASW) missions which require handling similar to Air Defense scramble operations. Aircraft engaged in these missions are identified from routine training or practice missions by use of the prefix "Echo Item." Air traffic control facility managers of facilities with "Echo Item" responsibilities shall develop and implement letter(s) of agreement supporting "Echo Item" operations which include the following:

- a. Method of notification.
- b. Procedures whereby:
  1. Any conflicting traffic is controlled on the basis that the "Echo Item" aircraft will be released immediately upon request with due regard to safety.

2. The "Echo Item" aircraft is cleared to a position where it will be first in takeoff sequence unless an active Air Defense scramble is in progress.

- c. The statement that the Navy assumes responsibility for separation of aircraft within the same mission.

### 12-5-2. SCOPELIGHT EAST/WEST FLIGHTS

Scopelight East/West is the name of a CINCLANT operation to notify ATC and NORAD facilities of the need for expeditious departure of command post aircraft during emergency conditions. Additional information regarding this operation may be located in the secure files of the concerned ARTCC/CERAP's.



## **Section 6. AIR DEFENSE RADAR EVALUATION**

### **12-6-1. AIR DEFENSE RADAR EVALUATION**

Air Defense has a continuing requirement to measure the effectiveness and quality of Air Defense radar and to establish operational limitations of new or modified radar systems. Air Defense Sectors coordinate flight details with the appropriate FAA regions and facilities before mission activation. These missions sample the performance quality of each radar. Normally, only one aircraft is needed for each flight, and it displays the ATC-assigned mode 3/A code. If two aircraft are used in the mission, the separation between these aircraft is a joint responsibility of the appropriate air defense sector and the pilots of the aircraft involved. These flights are handled as follows:

a. All evaluation flights will be conducted at or above FL 250.

b. Radar target definition checks require special spacing between two aircraft. The provision of this spacing is a joint responsibility of the appropriate air defense sector and the pilots of the aircraft involved.

c. Evaluation aircraft shall file an IFR flight plan. The ATC facility is responsible for separation of the evaluation aircraft from other IFR traffic. These aircraft shall be handed off to the Air Defense Control Facility (ADCF) prior to the evaluation route initial point (IP).

## **Section 7. SPECIAL AIR MISSION/SCOOT**

### **12-7-1. APPLICATIONS**

This special air mission/senior executive support service provides responsive and reliable air transportation for senior level Federal Government and White House staff personnel. The service also provides overseas transportation for small presidential delegations in support of time-critical negotiations involving international crisis situations. This service is operated by the 89th Military Airlift Wing flying C-20 series aircraft. This special military operation is named "Scoot." The remarks section of the flight plan will contain the term "SCOOT" when special handling is

requested. The term "Scoot" will not be part of the call sign but can be used when the aircraft is airborne to indicate a request for special handling.

### **12-7-2. OPERATIONS**

Operations in this category are as follows:

**a. Practice Exercise.** An exercise conducted at random for proficiency training.

**b. Planned Exercise.** An exercise with advance notification as to date and probable departure forwarded to the appropriate air traffic control terminal and en route facility.

## Section 8. CRUISE MISSILE OPERATIONS

### 12-8-1. PURPOSE

This section prescribes policy, route development criteria, coordination procedures, special operating procedures, and additional publication requirements for cruise missile operations.

### 12-8-2. POLICY

Cruise missile operations conducted in excess of 250 knots below 10,000 feet MSL shall be conducted in (1) restricted areas, (2) military operations areas, and/or (3) selected IR's in accordance with this descending order of precedence regarding airspace allocations and routes.

### 12-8-3. OPERATIONAL CONDITIONS

Cruise missile operations conducted outside restricted areas within the United States shall be in accordance with the following conditions:

a. Cruise missiles shall be accompanied by two chase aircraft escorting the cruise missile. The chase aircraft must at all times have the ability to maneuver the missile out of the flight path of conflicting traffic, fully complying with all provisions of 14 CFR part 91, subpart B.

#### NOTE-

*Exception: In the event a mechanical difficulty occurs with one of the chase aircraft, a single chase aircraft shall have two crew members and the ability to maneuver the missile as noted in subparagraph a.*

b. A high altitude communications aircraft shall be used in conjunction with the cruise missile and shall maintain continuous communication and radar contact with the appropriate ATC facility. It shall be the responsibility of the pilot of the communication aircraft to ensure all other involved aircraft receive all ATC communications.

c. Cruise missile operations shall be conducted in daylight hours only under visual flight rules conditions; flight visibility 5 miles, and distance from clouds 2,000 feet horizontal and 1,000 feet above/below and in accordance with 14 CFR part 91.119.

d. Cruise missile operations shall be contained in a letter of agreement (LOA). As a minimum, each LOA shall contain special operating procedures, responsibilities of scheduling unit, advance mission briefing, actual flight operations, lost communication procedure, and airspace allocation in use.

### 12-8-4. ROUTE DESIGNATION (CRITERIA) AND OPERATING PROCEDURES

Cruise missile operations conducted on selected MTR's shall be on IR's only. All IR's used for this purpose shall be developed in accordance with the criteria, route definition, processing, and operating procedures contained in Chapter 11.

### 12-8-5. PUBLICATION

In addition to the publication requirements in Chapter 11 regarding IR's, the unmanned aerospace vehicle routes (UAVRS) shall be portrayed by special charting symbology contained in Interagency Air Cartographic Committee (IACC) requirements documentation, IACC-2.

### 12-8-6. EFFECTIVE DATE

Prior to establishing the effective date of airspace allocations/IR's/LOA's to be used for cruise missile operations, the originating FAA region shall forward copies of proposed actions to FAA Headquarters, ATO-100, for review and approval.

## **Section 9. REMOTELY PILOTED VEHICLE (RPV)**

### **12-9-1. OPERATION**

Since RPV's do not have see and avoid capability, operation of these vehicles must be rigidly controlled to avoid hazards to other air traffic. Operation of RPV's shall be limited as follows:

- a. Within Class A airspace.
- b. Within restricted areas.
- c. Within warning areas.

d. Outside of the above areas, the RPV must be accompanied by a chase plane with direct communication with the controlling source facilities. It is the chase plane pilot's responsibility

to relay potential conflicts to the controlling source facilities and provide changes of heading and altitude to resolve any traffic conflicts. If an alternate means of observing RPV flight and communications with the controlling source facilities is available, which would provide a level of safety equal to that provided by the chase plane, it may be approved at the discretion of the concerned FAA region. This may include visual observation from one or more ground sites, RPV flight monitoring by patrol aircraft, primary radar observation, or the controlled firing area concept. (See FAA Order 7400.2.) Operations shall be conducted in VFR conditions.

## **Section 10. USAF UNDERGRADUATE FLYING TRAINING (UFT)/PILOT INSTRUCTOR TRAINING (PIT)**

### **12-10-1. DEFINITIONS**

a. The term UFT includes:

1. Flight Screening Program (FSP).
2. Undergraduate Pilot Training/Specialized Undergraduate Pilot Training (UPT/SUPT).
3. Euro-NATO Joint Jet Pilot Training (ENJJPT).
4. Specialized Undergraduate Navigator Training (SUNT).

### **12-10-2. KEY OPERATIONAL CONSTRAINTS**

a. Sortie Duration-T-37 and T-38 sorties normally average 1 hour and 20 minutes. T-1 sorties normally average 3 hours.

b. Student Pilot Solo Operations.

1. Instrument flight: Certified solo students may penetrate cloud layers in climb and descent only. In level flight, expect requests for revised clearances to avoid clouds. Solo students may request an amended clearance to permit deviation from assigned course as necessary to remain in visual meteorological conditions (see FAA Order 7110.65). Solo student requests for deviations are time critical and air traffic control shall approve these requests as soon as possible. If a student pilot refuses to accept a radar vector or clearance, make a record of the occurrence (including the pilot's reasons for refusal, if known), and retain it at the facility for 6 months.

2. Diverts: Unplanned diversions may require solos to land at other than military installations. UFT instructor pilots may require access to FAA air traffic control facilities to act as safety observers in support of these solo missions. Instructor pilot access authorization and activity limitations shall be defined in appropriate documents by affected facilities.

c. T-38 Icing Restrictions: T-38's cannot operate at altitudes where icing is forecast. When encountering ice (not forecast), expeditious assignment of an altitude above or below the icing level is critical because engine failure is probable.

### **12-10-3. RADAR SERVICE REQUIREMENTS**

a. Air traffic control facilities shall provide IFR radar surveillance and separation service from points on or near Air Education and Training Command (AETC) bases or auxiliaries to defined training areas and from training area return points where approach control service can be discontinued via hand-off to ground controlled approach (GCA), tower, or runway supervisory unit (RSU). IFR service is also required to and from the local auxiliary fields and boondock instrument practice sites.

b. AETC training flights operating in the en route system to and from airports outside local training areas shall be provided IFR separation service.

c. A minimum number of sorties shall be flown VFR in accordance with the syllabus training requirements. VFR advisory service shall be provided to these flights to the extent practicable.

### **12-10-4. MERGING TARGET VS STANDARD IFR SEPARATION**

a. Application of merging target procedures must be outlined in a letter of agreement between the controlling agency and the using agency. UFT T-37 aircraft shall be provided standard IFR separation until established in MOA/ATCAA. Once established in MOA/ATCAA, these flights may be provided merging target procedures.

### **12-10-5. AIRSPACE REQUIREMENTS**

a. Below 18,000 feet MSL, training areas shall be contained within MOA's. In the Class A Airspace, training areas shall be contained within ATCAA. The goal is to warn other IFR and VFR traffic of the high volume and nature of traffic operating therein. Under SUPT, the T-38 and T-1 will use the same geographical working areas, and operations shall be segregated by sterilized block times.

1. NAVAID definition: Individual T-37, T-38 and T-1 training areas shall be defined by VORTAC/TACAN arcs and radials. Conspicuous ground features also identify each area.

2. Training area size: Training area sizes are varied to accommodate the type of flying (contact, formation, instrument, etc.). Area configuration shall be adjusted only when necessary and letters of agreement are revised. T-37 training areas shall provide a minimum of 100 square nautical miles of usable airspace. T-38 and T-1 training areas shall provide a minimum of 200 square nautical miles of usable airspace.

3. Altitude blocks. As a minimum:

(a) T-37 training areas shall extend downward from FL 240 at least 11,000 feet and be subdivided into two blocks of 5,000 feet.

(b) T-38 high altitude training areas shall extend above FL 240 at least 4,000 feet and low areas shall extend at least 12,000 feet below FL 240.

(c) T-1 high altitude training areas shall extend above FL 240 at least 4,000 feet and low areas shall extend 4,000 feet below FL 240.

4. Number of areas: Coupled with smooth flow scheduling, the following minimum numbers of local training areas guarantee successful completion of AETC mission without saturating airspace. As a minimum:

(a) T-37: 18 training areas (9 high/9 low).

(b) T-38/T-1: 16 training areas (5 high/11 low).

(c) PIT airspace requirements: PIT requires less training areas than SUPT. As a minimum:

(1) T-37: (7 high/6 low).

(2) T-38/T-1: (5 high/10 low).

5. Area distance: Fuel capacities and syllabus constraints require fuel efficient training areas. T-37 training areas shall be within 60 NM of the main base. T-38 and T-1 training areas shall be within 100 NM of the main base.

6. Segregation: T-37 and T-38 low areas are not intermixed but may be separated with buffers. Do not arbitrarily establish buffers as a prerequisite for the provision of IFR separation in MOA subareas. However, buffers may be established for valid operational reasons. T-38/T-1 operations may operate in adjacent training areas contained in the same MOA.

7. ARTCC/CERAP's and AFSS/FSS's in and around the training areas are aware of the activity in the local area and shall give the appropriate advisories to civil pilots when contacted.

#### 12-10-6. MTR REQUIREMENTS

a. UPT/SUPT operations require access to at least six MTR's. Each UPT/SUPT wing shall have at least four of these routes.

#### 12-10-7. COMMUNICATION REQUIREMENTS

a. UPT/SUPT operations require adequate air/ground communications. Flight training requires extensive instructor/student interphone communication. Prudence dictates that ground initiated instructions or advice shall be streamlined to limit interruptions and avoid derogation of the training mission.

#### 12-10-8. SCHEDULING

a. At some bases, a longer scheduling interval may occasionally be necessary, but in the interest of maintaining present safety and flexibility, the minimum scheduling interval shall be 3 minutes.

#### 12-10-9. STEREOTYPE ROUTING/ FLIGHT PLANS

a. While radar vectoring provides flexibility, it decreases a controller's capacity to provide service. Monitoring of stereotype routes is preferred because it provides more effective use of controller as well as instructor/student time and talent. To cope with the high volume of traffic, the following shall be provided:

1. Stereotyped departure routes from pickup points on or near the airport to training areas and other en route points.

2. Stereotyped turbojet en route descents from training areas or en route points to GCA, tower, or RSU hand-off for each runway and direction of operation.

3. Flight plan filing and processing shall be streamlined to the extent that the flight identification and two or three words are sufficient to tell the controller where an aircrew wants to go and what the aircrew wants to do.

**12-10-10. LETTERS OF AGREEMENT (LOA's)**

Emergency, lost communications and all local procedures shall be documented in LOA's. Because of the volume of traffic and the complexity of operation, letters of agreement must be carefully prepared and updated frequently to ensure timely improvements of service and safety.

**12-10-11. AUTHORIZATIONS**

a. The procedures used in UFT/PIT conform with 14 CFR 91 (except where waived/ exempted) and FAA Order 7110.65 as supplemented by appropriate LOA processed in accordance with FAA Order 7210.3. Authorized deviations are as follows:

1. Solo student pilot flying IFR as indicated in paragraph 12-10-2b.

2. Exemption 49D to 14 CFR 91.83(b), Alternate Airport Requirements

3. T-38/T-1 airspeeds in excess of 250 KIAS below 10,000 feet MSL are authorized by competent military authority in accordance with FAA Order 7110.65 and the letter of authorization granted to DOD.

4. Merging target procedures: When T-37 aircraft are established in MOA/ATCAA and

airspace limitations would derogate mission requirements if IFR separation were applied, the following radar procedures may be used during VFR weather conditions provided procedures have been established in a LOA.

(a) Issue radar traffic information to aircraft whose targets are likely to merge unless the aircraft are known to be separated vertically.

(b) Issue directions using "work [direction]" control techniques to ensure the radar targets of aircraft previously issued as traffic do not touch.

(1) Work [direction] - an air traffic control instruction whereby the pilot will continue a maneuver to completion then turn toward the specified direction.

(2) Work [direction] Immediately - an air traffic control instruction whereby the pilot will break off a maneuver and immediately turn toward the specified direction.

**NOTE-**

*Air Education Training Command assumes responsibility for the consequences of application of merging target procedures.*

5. Exemption No. 2861A to 14 CFR 91.81, Single Altimeter Setting For Frequent Transit of FL 180. (See FAA Order 7210.3.)

## Section 11. SPACE SHUTTLE SUPPORT OPERATIONS

### 12-11-1. PURPOSE

This chapter prescribes policy, criteria, and administrative and operating procedures pertaining to launch notification, classified launch notification, and emergency procedures in support of future space shuttle transportation system missions.

### 12-11-2. POLICY

The FAA will support all NASA/DOD space shuttle operations. In addition, local agreements will include NASA priority use of CONTROLLED AIRSPACE at primary and emergency locations.

### 12-11-3. BACKGROUND

Launch operations will be controlled from the Kennedy Space Center. Flight operations (from liftoff through landing and rollout) will be controlled from the Mission Control Center at the Johnson Space Center, Texas. Landing sites are:

- a. Primary: Edwards AFB, California, or Kennedy Space Center.
- b. Secondary: White Sands Space Harbor in the White Sands Missile Range.
- c. Contingency: Overseas: Kadena, Japan; Rota, Spain; Honolulu, Hawaii.

#### NOTE-

*Any civil or DOD installation with a 10,000 foot or longer runway between 57° north and 57° south could be called upon to support an emergency landing.*

### 12-11-4. ROUTINE LAUNCH/RECOVERY NOTIFICATION

a. NASA shall provide to the FAA space shuttle launch and recovery schedules at least 7 calendar days prior to the effective date.

b. NASA shall provide the launch recovery schedule changes to FAA as soon as practical, but not later than 24 hours in advance. Telephone coordination of changes to the schedule is acceptable when necessary.

### 12-11-5. CLASSIFIED LAUNCH/RECOVERY NOTIFICATION

a. The FAA recognizes that the military has a continuing requirement for periodic launches/recoveries that are classified in nature due to payload and/or mission.

b. Classified notification procedures shall be developed to ensure, to the extent possible, minimal impact on aircraft operations conducted in affected airspace.

### 12-11-6. FACILITY NOTIFICATION

In the event of an emergency landing within the U.S., the Johnson Space Center Mission Control will relay all required airspace requests to the FAA ATCSCC for coordination with appropriate ARTCC/CERAP facilities. ARTCC/CERAP's are responsible for communications/coordination with effected terminal/AFSS/FSS facilities. Should the emergency landing location be outside the CONUS, but in airspace under U.S. jurisdiction, oceanic ATC facilities shall coordinate with ATC facilities of other governments as appropriate or feasible. If unable to broadcast a prior notification message, the orbiter crew shall attempt to contact the intended airfield on the 243.0 MHz emergency channel approximately 12 minutes prior to touchdown.

### 12-11-7. FACILITY RESPONSIBILITIES

Upon receiving notification of an emergency landing, ATC facilities shall:

- a. Clear all airspace within a 30 NM radius to FL 600.
- b. Alert the available fire/crash/rescue equipment to respond using standard fire fighting protective equipment and self-contained breathing apparatus.
- c. Ensure appropriate authorities are notified to prevent access by unauthorized personnel within 400 meters of the orbiter due to toxic fuels onboard.



## Section 12. FORMATION FLIGHT

### 12-12-1. PURPOSE

This section prescribes policy, configurations, and separation standards for military formation flight.

### 12-12-2. POLICY

The DOD has a continuing requirement, inherent through the nature of its mission, to operate aircraft in formation flight. In the interest of the public and the aviation community, it is imperative that controllers be knowledgeable of the various formation tactics employed by DOD aircraft.

### 12-12-3. FORMATIONS

A formation is defined as more than one aircraft which, by prior arrangement between the pilots, operate as a single aircraft with regard to navigation and position reporting. Separation between aircraft within the formation is the responsibility of the flight leader and the pilots of the other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control and during join up or breakaway.

a. **Standard Formation.** A formation in which a proximity of no more than 1 mile laterally or longitudinally and within 100 feet vertically from the flight leader is maintained by each wingman.

b. **Nonstandard Formation.** A formation operating under any of the following conditions:

1. When the flight leader has requested and air traffic control has approved other than standard formation dimensions.

2. When operating within an authorized ALTRV or under the provisions of a letter of agreement.

3. When the operations are conducted in airspace specifically designed for a special activity.

### 12-12-4. FORMATION DEPARTURE

A formation departure consists of more than one aircraft at intervals of 1 minute or less which, by prior arrangement between the pilots, operate as a single aircraft with regard to navigation and

position reporting. The departure portion of the flight may terminate at a preplanned breakup point which may be located up to, but not beyond, the planned initial level-off at cruise altitude. Formation flight requirements of paragraph 12-12-3 apply.

### 12-12-5. CELL FORMATION

A cell formation flight is defined as two or more aircraft with the same intended route of flight maintaining station-keeping operations by either or both visual and electronic means. Formation flight requirements of paragraph 12-12-3 apply.

### 12-12-6. NONSTANDARD FORMATION TACTICS

Some aircraft, due to the size and maneuverability, normally operate within a nonstandard cell formation. Bomber and tanker aircraft operating in a cell, operate with 1 nautical mile spacing (B-52 uses 2 nautical miles) between cell members intrail and 500 feet vertical separation as illustrated in FIG 12-12-1 and FIG 12-12-2).

#### NOTE-

*Controllers shall not use the flight leader's Mode C readout for separation purposes. Asking the flight leader to "say altitude" only verifies the lead aircraft altitude.*

a. **Formation Departure Procedures.**

1. B-52/KC-135/KC-10. Always operate in a nonstandard cell formation.

(a) **Take-off interval:** Normally, 1 minute between individual cell aircraft. KC-10 interval may be greater than 1 minute when individual aircraft gross weight will vary more than 100,000 pounds. The KC-10 flight leader will establish the interval and notify ATC what interval is being used.

(b) **Intermediate level-off:** Block altitude is required for any intermediate level-off altitude assigned by ATC. Wing aircraft "stack down" is with 500 feet vertical separation between each cell aircraft and close to en route longitudinal spacing. Vertical and longitudinal spacing may be greater than normal until level-off at cruise altitude is attained. Controllers shall not use flight leader's

Mode C readout for separation purposes until verification of formation configuration.

(c) En route formation: Nonstandard with wing aircraft "stacked up" with 500 feet vertical separation and 1 nautical mile interval between aircraft as shown in FIG 12-12-1. The last aircraft maintains the base altitude assigned.

2. B-1. Always operated in a nonstandard cell formation.

(a) Take-off interval: One minute between individual aircraft.

(b) Intermediate level-off: Block altitude is required for any intermediate level-off altitude assigned by ATC. Wing aircraft "stack down" with 500 feet vertical separation and close to 1 nautical mile longitudinal spacing. Separation and spacing may be greater until level-off cruise altitudes are attained. Controllers shall not use flight leader's Mode C readout for separation purposes until verification of formation configuration.

(c) En route formation: Nonstandard with wing aircraft "stacked down" with 500 feet vertical separation and 1 nautical mile longitudinal spacing between aircraft as shown in FIG 12-12-2. The last aircraft maintains the base altitude assigned.

#### b. En Route Cell Formation Procedures.

1. En route cell formations operate in the nonstandard formation configuration indicated in subparagraph a and shown in FIG 12-12-1 and FIG 12-12-2 except during aerial refueling. Aerial refueling formation configurations are shown in FIG 12-12-3, FIG 12-12-4, FIG 12-12-5, FIG 12-12-6, FIG 12-12-7, FIG 12-12-8, FIG 12-12-9, FIG 12-12-10, FIG 12-12-11, Air Refueling Formation.

2. Cell formation leaders are responsible for obtaining ATC approval to conduct formation flight operations in a nonstandard formation configuration.

3. Unless otherwise directed by ATC, all aircraft within a cell formation will squawk the ATC assigned Mode 3A/C beacon code until established within the assigned altitude block and closed to the proper en route cell interval. When cell configuration requires an interval greater than 3 nautical miles between the formation leader and the last

aircraft in the cell, both the formation leader and the last aircraft will squawk the assigned Mode 3A/C beacon code.

4. After level-off at cruise altitude, should separation between the cell leader and any other aircraft exceed the ATC authorized dimensions for the nonstandard formation, the aircraft outside the formation limits will no longer be considered a part of the cell. The pilot of such aircraft shall immediately notify the formation leader of the aircraft's position and request individual control from ATC until the aircraft is reestablished within the formation.

#### 12-12-7. CELL SEPARATION STANDARDS

Separation standards applied to a nonstandard cell formation shall be as indicated in the following:

a. A single altitude/flight level shall not be assigned to a nonstandard cell formation without concurrence of the formation leader.

b. Air traffic control shall meter other air traffic so as to permit assignment of sufficient altitudes to a nonstandard formation flight to allow intra-cell vertical spacing of 500 feet between each aircraft in the formation.

c. En route longitudinal intra-cell spacing for a nonstandard formation is 1 nautical mile (B-52, 2 nautical miles) between individual cell aircraft. Air traffic control shall apply standard separation criteria between the nonstandard formation envelope and other nonformation air traffic.

#### 12-12-8. NONSTANDARD FORMATION NOTIFICATION AND APPROVAL

When military requirements dictate large aircraft conduct nonstandard formation flight, notification and approval shall be accomplished by the following methods:

a. The formation leader shall indicate the number and type aircraft in the appropriate item of the military flight plan. In addition, "nonstandard cell formation" will be listed as the first entry in flight plan remarks.

b. The formation leader shall notify ATC upon initial contact that cell operations are being conducted in a nonstandard formation, and if required, advise ATC of the intra-cell separation and spacing being employed.

c. During the departure phase of flight, the formation leader shall not report level at an ATC assigned altitude or within an altitude block until all formation aircraft have attained the assigned altitude block.

#### **12-12-9. AIR REFUELING FORMATION**

Air refueling formations are always nonstandard and require additional airspace over a nonstandard cell formation as shown in FIG 12-12-3, FIG 12-12-4, FIG 12-12-5, FIG 12-12-6, FIG 12-12-7, FIG 12-12-8, FIG 12-12-9, FIG 12-12-10, and FIG 12-12-11.

a. As shown by the illustrations in these figures, air refueling cells normally have a frontal width equal in nautical miles to the number of tanker aircraft contained within the cell. However, when the total number of receiver aircraft exceeds the number of tankers, the frontal width is correspondingly increased by 1 nautical mile for each additional receiver aircraft, but will not exceed 5 nautical miles.

b. Controllers should exercise caution during en route, on course, or buddy refueling operations to insure nonparticipating air traffic is provided sufficient lateral, longitudinal, or vertical separation from the refueling formation envelope to meet standard separation criteria.

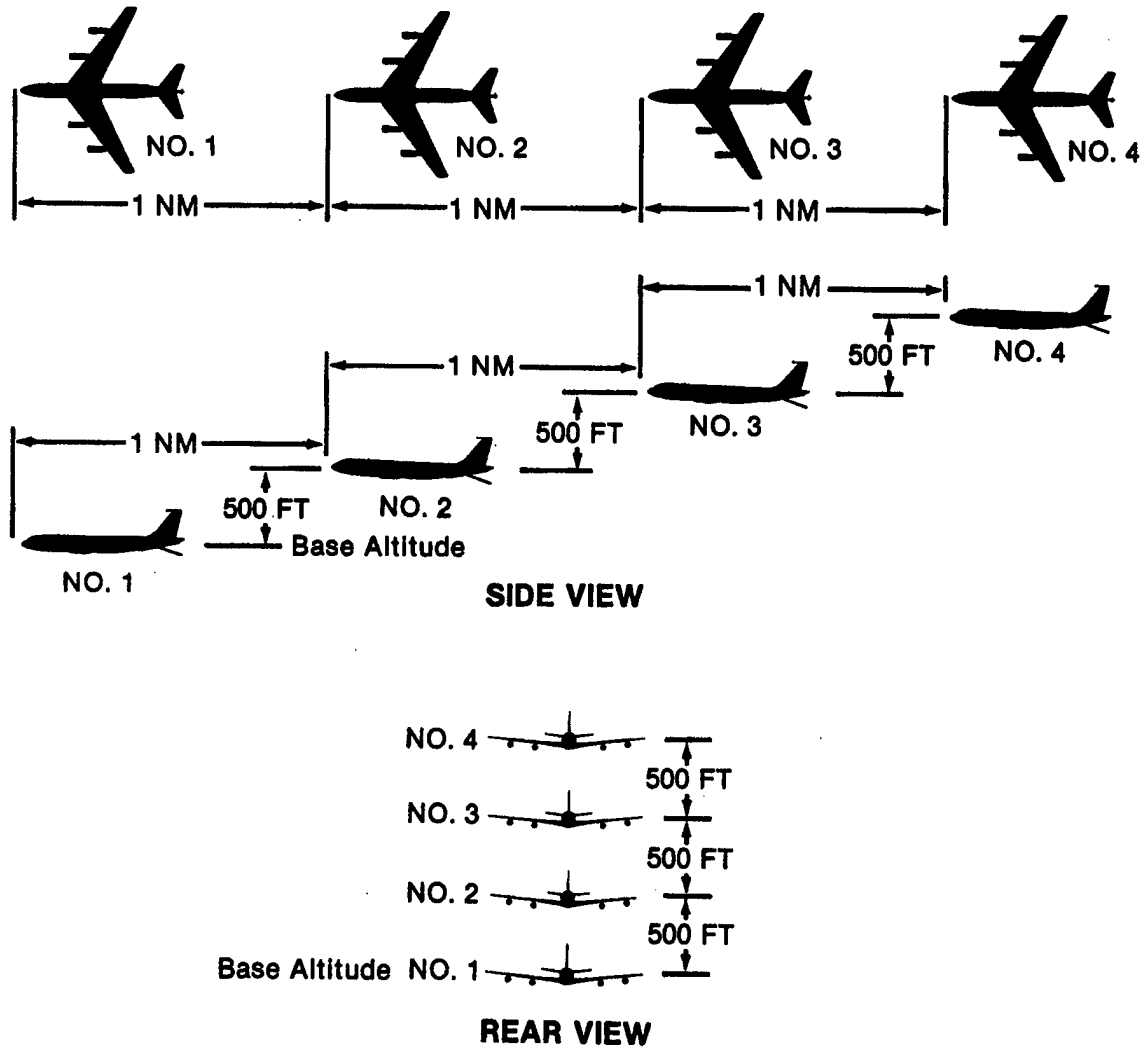
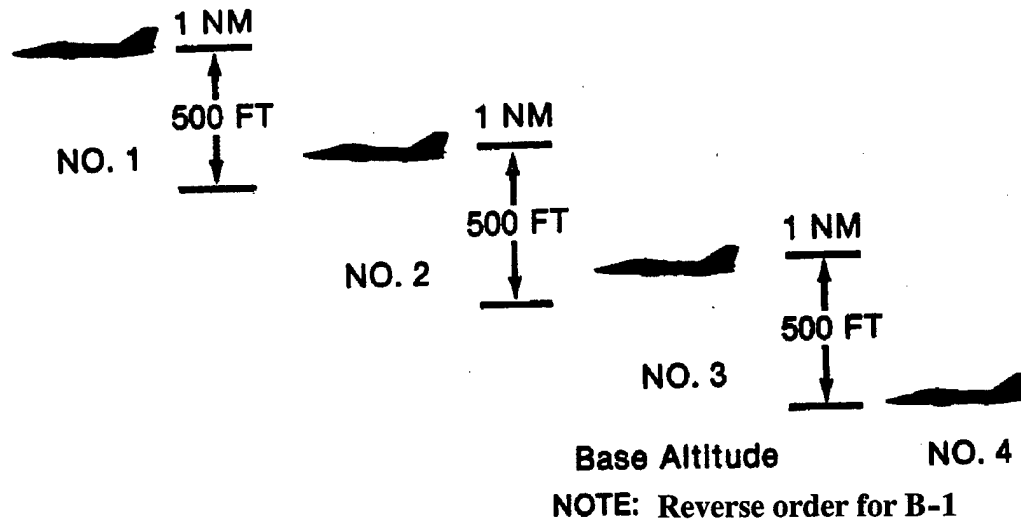
**EN ROUTE CELL (STACKED UP)**

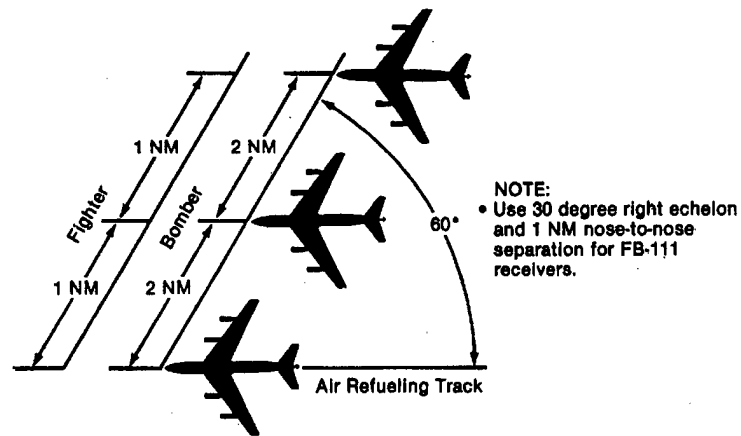
FIG 12-12-1

# EN ROUTE CELL (STACKED DOWN)

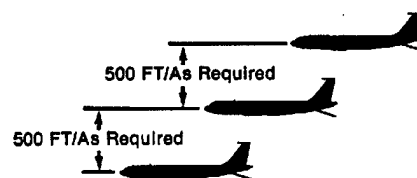


## SIDE VIEW

FIG 12-12-2



## TOP VIEW



## SIDE VIEW

FIG 12-12-3

# ONE TANKER/THREE RECEIVERS AIR REFUELING VISUAL FORMATION

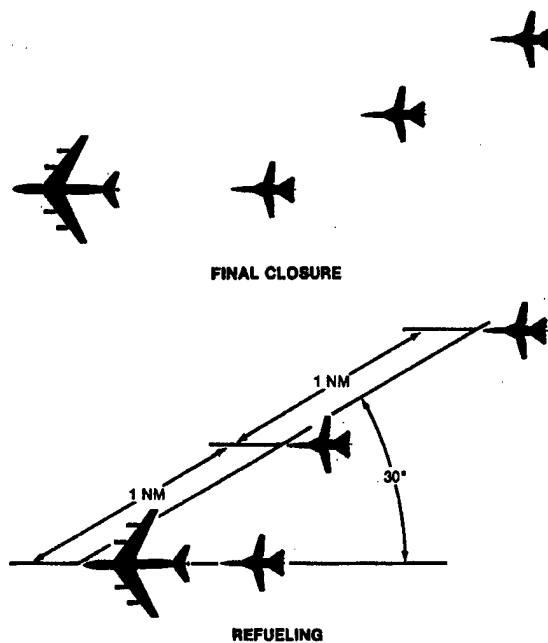


FIG 12-12-4

## TANKER/RECEIVER FORMATION DURING FINAL CLOSURE (ONE TANKER/ONE RECEIVER)

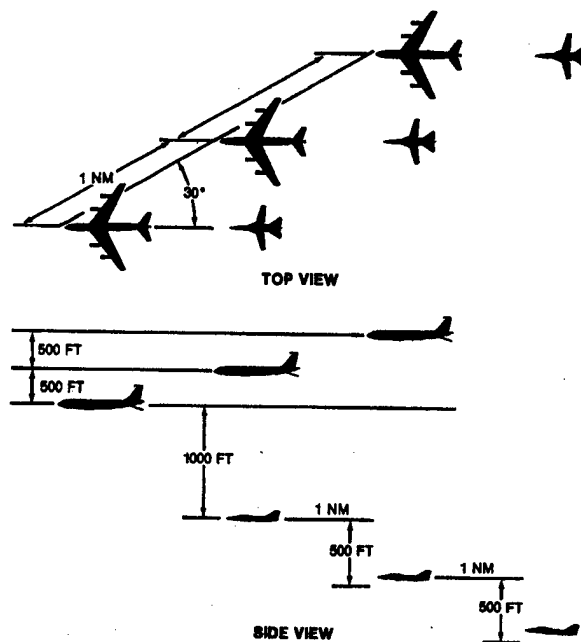


FIG 12-12-5

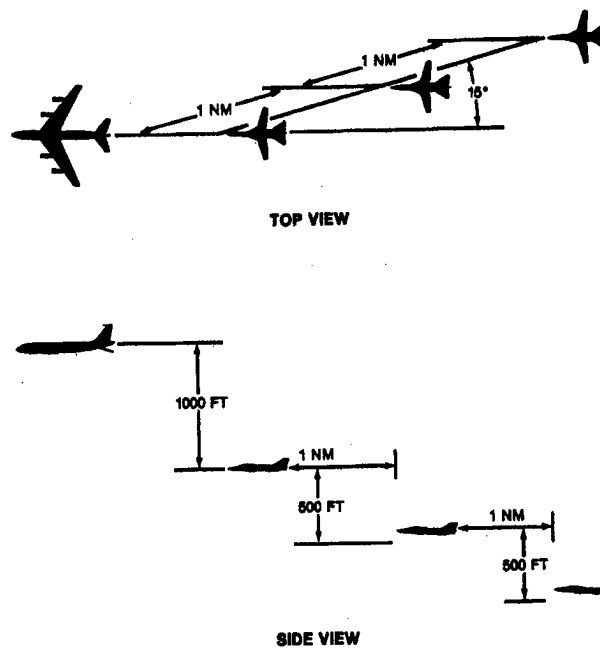
**ONE TANKER/THREE RECEIVERS AIR REFUELING CELL FORMATION**

FIG 12-12-6

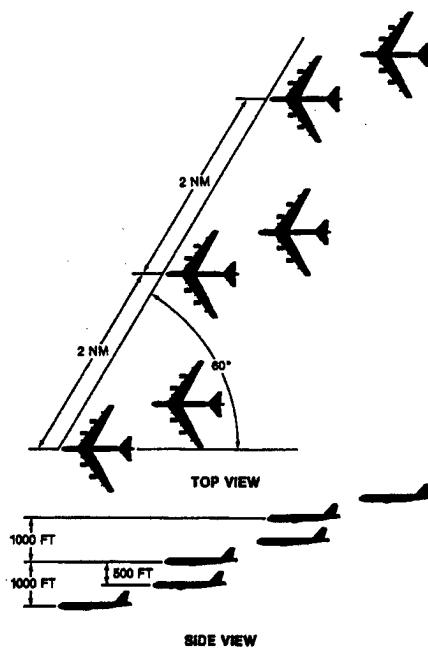
**RECEIVER FORMATION (SIX RECEIVERS)**

FIG 12-12-7

# **RECEIVER FORMATION (THREE RECEIVERS) AND FORMATION PROCEDURES (ONE TANKER/THREE OR MORE RECEIVERS)**

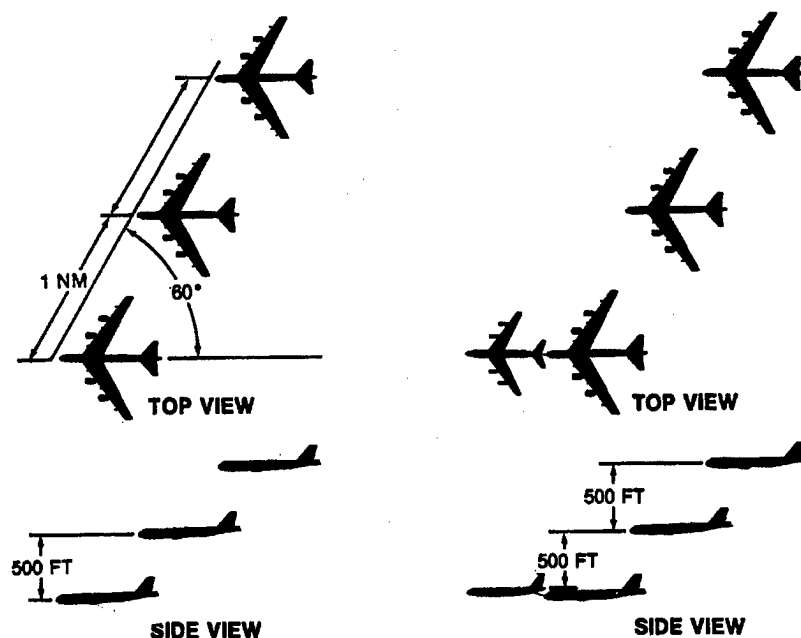


FIG 12-12-8

## **FORMATION PROCEDURES (THREE TANKERS/THREE RECEIVERS)**

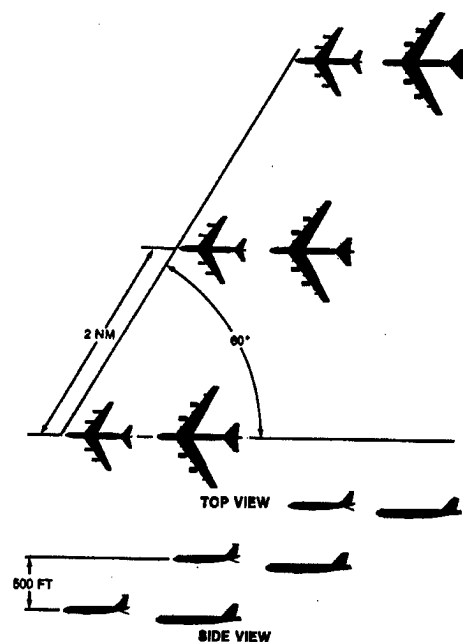


FIG 12-12-9



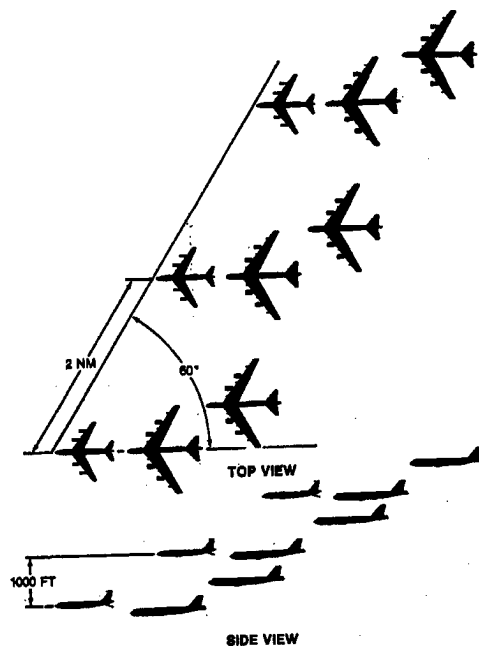
**FORMATION PROCEDURES (THREE TANKERS/SIX RECEIVERS)**

FIG 12-12-10

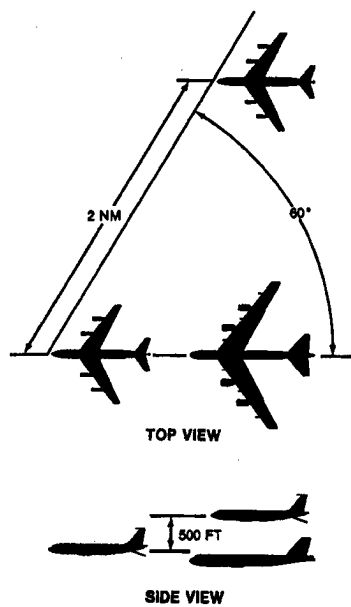
**FORMATION PROCEDURES (TWO TANKERS/ONE RECEIVER)**

FIG 12-12-11

## **Section 13. SPECIAL AIR MISSION "INFO"**

### **12-13-1. APPLICATIONS**

This special air mission provides international and domestic transportation for the Commonwealth of Independence States (CIS) and American delegations in support of Intermediate-Range Nuclear Force (INF) Reduction Treaty verification requirements. This special air mission is named "INFO," and it uses the call sign "INFO" in providing special handling for aircraft engaged in INF treaty missions.

### **12-13-2. OPERATIONS**

The CIS delegations will arrive in CONUS at predetermined points-of-entry and will be flying

IL-62, TU-134 or TU-154 SS aircraft. Further domestic transportation to designated inspection sites will be provided by Air Mobility Command (AMC) aircraft. Helicopter support flights may be required at some locations. Operations in this category are as follows:

a. International CIS Flights: In addition to complying with procedures contained in FAA Order 7110.65 for the handling of special interest flights, provide special handling to CIS aircraft using the call sign "INFO."

b. Domestic USAF Support Flights: Provide special handling to AMC aircraft, both on the ground and airborne, using the call sign "INFO."

# Chapter 13. MILITARY RADAR UNIT DUTIES, RESPONSIBILITIES, AND PROCEDURES

## Section 1. GENERAL

### 13-1-1. MILITARY RADAR UNIT (MRU)/AIRBORNE RADAR UNIT (ARU)

MRU/ARU's are not commissioned ATC facilities. Therefore, they shall not be authorized nor requested to provide air traffic control service. Military command and control functions, including traffic advisories, will be provided to participating military aircraft operating within airspace which has been released to the unit by the appropriate ATC facility.

### 13-1-2. AIRBORNE RADAR UNIT (ARU)

An ARU may be used as a radar monitoring facility or as an extension of an MRU in planned exercises or daily training under the following conditions:

- a. The MRU assumes the responsibility to ensure that the operation is contained within the assigned area as specified in paragraph 13-1-7a.
- b. The ARU will assist aircraft under its jurisdiction to remain within the airspace released to the unit by ATC through the MRU.
- c. The use of an ARU and the associated airspace must be fully coordinated between the parent MRU and the affected ATC facilities.

### 13-1-3. TRANSFER OF RESPONSIBILITY

The MRU/ARU's will not be involved in the transfer of control of aircraft to/from an ATC facility. Transfer of flight information shall be accomplished directly between the MRU/ARU and the appropriate ATC facility as specified in a letter of agreement.

- a. Flight information shall be passed prior to the aircraft entering and/or leaving the ATCAA/SUA.
- b. Communications/monitoring responsibility by MRU: In the event flight information from the MRU to the ATC facility cannot be effected, the MRU will assist the flight in remaining within the

assigned area. The MRU shall retain communications with and radar-monitor the aircraft until further clearance is received from ATC.

#### NOTE-

*In the event communication cannot be established, the MRU will instruct the flight to contact the ATC facility and request instructions.*

### 13-1-4. AIRBORNE WARNING AND CONTROL SYSTEM (AWACS)

An AWACS may be used as an MRU in planned exercises or daily training under the following conditions:

- a. The AWACS is responsible to ensure that the operation is contained within the airspace area as specified in paragraphs 13-1-7 and paragraph 13-1-10.
- b. The use of the AWACS and the associated airspace is fully coordinated with affected air traffic control facilities.
- c. When the AWACS cannot establish direct two-way communication with ATC for transfer of flight information, a ground-based MRU/ADCF may be designated to facilitate coordination. Ground-based MRU/ADCF's must be identified in letters of procedure/agreement with affected ATC facilities before being used in this capacity.

### 13-1-5. FAA RESPONSIBILITY

Where control of military activities is delegated to MRU's, qualified FAA personnel shall provide technical assistance, as required/requested, to familiarize military personnel with applicable ATC procedures and related responsibilities. In NORAD Regions/Sectors where there is an ADLO assigned, or for AWACS, the AWACS ADLO, if assigned, or the ACCLO shall be responsible for this function. At other locations, the FAA regional office shall designate the office or facility responsible for this function. Where ATC service cannot be provided within currently available resources, FAA regions/facilities should initiate appropriate programming action to support the training/RDT&E activity.

### 13-1-6. ATC FACILITIES RESPONSIBILITY

ATC facilities providing radar advisory service to VFR aircraft shall alert them of the MOA/ATCAA. If the pilot indicates that the aircraft will penetrate the areas, ATC shall advise the military radar facility of the VFR penetration and transfer flight information on the aircraft to the military facility.

### 13-1-7. RELEASE OF AIRSPACE

Airspace may be released to an MRU in accordance with a letter of agreement to accommodate training/RDT&E activity requiring military radar control provided:

**a. The MRU shall keep aircraft:**

1. One and one-half miles from the boundary of the airspace when aircraft are less than 40 miles from the radar antenna.

2. Two and one-half miles from the boundary of the airspace when aircraft are more than 40 miles from the radar antenna.

**b. The military command assumes responsibility for separation of participating aircraft within the area.**

**c. MRU's will assist participating aircraft in avoiding all observed non-participating traffic through the issuance of radar traffic information.**

**d. The MRU shall confirm the assigned altitude block within special use airspace with participating aircraft upon initial contact/airspace entry to ensure each is familiar with the vertical airspace limits.**

### 13-1-8. DELEGATION OF CONTROL AUTHORITY

MRU's may be authorized to provide military command and control service within ATCAA/SUA to military aircraft participating in daily training/RDT&E activities or planned exercises when the following conditions are met:

**a. The staffing and personnel qualifications of the MRU meets acceptable standards as determined jointly by the FAA and military.**

**b. The radar presentation and equipment performance of the unit is adequate for the service being provided.**

**c. MRU's have adequate video mapping, map overlays, or computer generated displays on radar scopes to show lateral limits of the area, common reference points, and other pertinent data as determined locally by the military/FAA facility involved.**

**d. Land line communications are provided by the military between the MRU and each ATC facility sharing a common boundary with the area in which training/RDT&E activity is being conducted. For AWACS MRU operations, adequate communications shall be established between the AWACS mission crew and the ATC facility operating positions affected to support the mission activity to be conducted. AWACS mission requirements shall not exceed the ARTCC/CERAP(s) communication capability.**

### 13-1-9. MILITARY RESPONSIBILITY

The appropriate military command shall be responsible for ensuring that equipment performance and staffing of the MRU are adequate for proper execution of the letter of agreement. The MRU shall be responsible for:

**a. Retaining aircraft under its jurisdiction within the limits of altitudes and within the boundary of airspace released to the unit by ATC as specified in paragraph 13-1-7.**

**b. Providing radar traffic advisory service to participating military aircraft.**

**c. Separation of participating military aircraft while operating in the ATCAA/SUA.**

**d. Immediately advising ATC whenever participating aircraft cannot remain within the boundary of the allocated airspace.**

**e. Providing military command and control functions as directed by military authorities.**

**f. Relaying all ATC clearances verbatim.**

**g. Advising the associated ARTCC/CERAP whenever the activities within the allocated airspace are terminated.**

### **13-1-10. ADDITIONAL AWACS RESPONSIBILITIES**

In addition to the responsibilities specified in paragraph 13-1-9, the following responsibilities/requirements/limitations apply to the AWACS aircraft for MRU operations.

a. AWACS orbit areas must be established and oriented to ensure continuous communications capability both with the appropriate ATC facilities and the aircraft under AWACS jurisdiction in designated airspace.

b. The AWACS shall not provide services below FL 180 within U.S. airspace or in offshore airspace in which domestic ATC service is exercised unless, the AWACS's primary and secondary (IFF) radars are operational.

c. All missions in which the AWACS will function as an MRU must be fully coordinated by the 552nd Air Control Wing with the appropriate ATC facility(s) at least 4 days prior to mission execution using a mutually agreed upon checklist of the necessary data to be coordinated.

d. Radar correlation shall be accomplished by AWACS crew prior to providing services in airspace released to AWACS. The following procedures apply:

1. AWACS radar will conduct a internal system cross correlation check. If internal system cross checks cannot be validated, the AWACS will be treated as an ARU or the mission terminated until validation can be completed.

2. The AWACS mission crew shall notify the appropriate ARTCC/CERAP or control facility of the internal system correlation check accuracy.

3. In the event AWACS primary/secondary radar, computer, or Navigation Computer System (NCS) is inoperable due to a malfunction, another internal correlation check will be accomplished prior to resumption as an MRU.

4. In the event the AWACS radar system is inoperable for any reason, another correlation check shall be required prior to resumption as a MRU.

e. Scrambles shall not be initiated by the AWACS for active air defense missions. This does not preclude the coordination of scrambles through the NORAD Region/Sector or the testing of mutually developed procedures for AWACS issued scramble orders.

f. AMIS information will not be provided to the AWACS mission crew by the ARTCC/CERAP.

### **13-1-11. SEPARATION BETWEEN PARTICIPATING AND NON-PARTICIPATING AIRCRAFT**

ATC facilities shall provide separation between non-participating IFR aircraft cleared to transit an ATCAA/SUA. Such separation shall be accomplished by coordination with the MRU at least 5 minutes prior to the ATCAA/SUA boundary penetration to obtain from the MRU a release to ATC of altitude(s) and/or flight level(s) throughout the entire ATCAA/SUA. A transfer of flight information of non-participating aircraft will be effected with the MRU by ATC.

#### **NOTE-**

*ATC retains the authority to take back the airspace as specified in a letter of agreement.*

## **Section 2. INTERCEPT TRAINING ACTIVITIES**

### **13-2-1. AREA OF OPERATION**

Intercept training activities shall be conducted under the following conditions:

a. Within Restricted Areas, Warning Areas, Military Operations Areas, and at FL 180 and above in ATCAA's within the United States and its territorial waters.

b. Participating aircraft shall display transponder codes as assigned by ATC at all times unless otherwise coordinated.

c. Transponder-off operations shall not be conducted except as authorized in an FAA Headquarters approved exemption to 14 CFR 91.215.

### **13-2-2. RADAR SURVEILLANCE**

a. Intercept training activities shall be conducted under the surveillance of an MRU including AWACS aircraft to the extent such coverage or capability is available.

b. When MRU capability does not exist, ATC radar facilities should provide radar surveillance when staffing and work load permits. The details of radar coverage areas and the services to be provided will be included in a letter of agreement between the appropriate ATC facilities and military operational units.

## Section 3. FAA/MILITARY JOINT EVALUATIONS

### 13-3-1. PURPOSE

To provide for joint FAA/military evaluations of military radar units every two years unless otherwise required.

### 13-3-2. SCOPE OF EVALUATION

The FAA/military shall ensure that the following actions are taken:

- a. Furnish names and security clearances of participating personnel.
- b. Brief MRU staffs on the scope and intent of the evaluation.
- c. Ensure that adequate activity is scheduled at the facility to achieve evaluation objectives.

### 13-3-3. ADVANCE COORDINATION

Arrangements for proposed evaluations shall normally be coordinated 30 days in advance. However, evaluation of specific problem areas may be conducted on short notice as mutually agreed.

### 13-3-4. OBJECTIVES

Evaluation objectives are as follows:

- a. Evaluate the adequacy of authorized services.
- b. Evaluate the application of established procedures.
- c. Evaluate the currency of operational procedures and agreements.
- d. Detect and report for corrective action any weakness in applicable training programs.

### 13-3-5. BASIC EVALUATION TEAM

The team shall consist of at least one FAA air traffic control representative and at least one military representative.

### 13-3-6. "TRUSTED AGENTS"

Military and FAA personnel conducting evaluations during exercises shall be designated "trusted agents." Evaluations shall be conducted in a manner that will not interfere with the mission of the military radar unit involved.

### 13-3-7. OUT BRIEFING

An out-briefing shall be conducted at the conclusion of the evaluation, and evaluators will brief on their respective portion of the evaluation. The out-briefing should be attended by the appropriate supervisory personnel of the military radar unit concerned.

### 13-3-8. PREPARE JOINT REPORT

Evaluation reports shall be handled as follows:

- a. A joint report shall be prepared at the conclusion of the evaluation. The report shall contain factual comments pertinent to items in paragraph 13-3-4.
- b. The report shall not be considered complete, nor shall it be distributed, until signed by appropriate military and FAA representatives of the evaluation team.
- c. Items that require follow-up action shall be specified.
- d. Follow-up actions shall be initiated within 20 working days from the date of the report.
- e. FAA regions and the military services shall be responsible for distribution of reports within their respective agencies.
- f. Separate minority reports may be filed if either FAA or military representatives disagree with the consolidated report.

## Appendix 1.

### THE WHITE HOUSE—EXECUTIVE ORDER 11161 AS AMENDED BY EXECUTIVE ORDER 11382 RELATING TO CERTAIN RELATIONSHIPS BETWEEN THE DEPARTMENT OF DEFENSE AND THE FEDERAL AVIATION ADMINISTRATION

WHEREAS Section 302(e) of the Federal Aviation Act of 1958 provides, in part, that in the event of war the President by Executive order may transfer to the Department of Defense any functions (including powers, duties, activities, facilities, and parts of functions) of the Federal Aviation Administration; and

WHEREAS it appears that the defense of the United States would require the transfer of the Federal Aviation Administration to the Department of Defense in the event of war; and

WHEREAS if any such transfer were to be made it would be essential to the defense of the United States that the transition be accomplished promptly and with maximum ease and effectiveness; and

WHEREAS these objectives require that the relationships that would obtain in the event of such a transfer as between the Federal Aviation Administration and the Department of Defense be understood in advance by the two agencies concerned and be developed in necessary detail by them in advance of transfer;

NOW, THEREFORE, by virtue of the authority vested in me by Section 302(e) (72 Stat. 746; 49 U.S.C. 1343 (c)), and as President of the United States and Commander in Chief of the Armed Forces of the United States, it is hereby ordered as follows:

Section 1. The Secretary of Defense and the Secretary of Transportation are hereby directed to prepare and develop plans, procedures, policies, programs, and courses of action in anticipation of the probable transfer of the Federal Aviation Administration to the Department of Defense in the event of war. Those plans, policies, procedures, programs, and courses of action shall be prepared and developed in conformity with the following described standards and conditions—

(A) The Federal Aviation Administration will function as an adjunct of the Department of Defense with the Federal Aviation Administration being responsible directly to the Secretary of Defense and subject to his authority, direction, and control to the extent deemed by the Secretary to be necessary for

the discharge of his responsibilities as Secretary of Defense.

(B) To the extent deemed by the Secretary of Defense to be necessary for the accomplishment of the military mission, he will be empowered to direct the Administrator to place operational elements of the Federal Aviation Administration under the direct operational control of appropriate military commanders.

(C) While functioning as an adjunct of the Department of Defense, the Federal Aviation Administration will remain organizationally intact and the Administrator thereof will retain responsibility for administration of his statutory functions, subject to the authority, direction, and control of the Secretary of Defense to the extent deemed by the Secretary to be necessary for the discharge of his responsibilities as Secretary of Defense.

Section 2. In furtherance of the objectives of the foregoing provisions of this order, the Secretary of Defense and the Secretary of Transportation shall, to the extent permitted by law, make such arrangements and take such actions as they deem necessary to assure—

(A) That the functions of the Federal Aviation Administration are performed during any period of national emergency short of war in a manner that will assure that essential national defense requirements will be satisfied during any such period of national emergency.

(B) Consistent with the provisions of paragraph (A), (B), and (C) of Section 1 of this order, that any transfer of the Federal Aviation Administration to the Department of Defense, in the event of war, will be accomplished smoothly and rapidly and effective operation of the agencies and functions affected by the transfer will be achieved after the transfer.

LYNDON B. JOHNSON  
THE WHITE HOUSE  
July 7, 1964



## MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENT OF DEFENSE AND THE FEDERAL AVIATION AGENCY IMPLEMENTING E.O. 11161

The Department of Defense and the Federal Aviation Agency pursuant to the requirements of Executive Order 11161 of July 7, 1964, Relating to Current Relationships Between the Department of Defense and the Federal Aviation Agency, agree, as hereinafter set forth:

a. On the relationship which shall obtain between the Department and the Agency if, in the event of war, the Agency is transferred to the Department;

b. On plans to assure that the functions of the FAA are performed during any period of national emergency short of war in a manner that will assure that essential national defense requirements will be satisfied; and

c. On the premises and procedures which shall be utilized in the development of plans essential to provide for an orderly, smooth, and effective transition of FAA to a wartime posture.

### ARTICLE I. DEFINITIONS

As used in this Memorandum, the following terms shall mean:

"war" - A Presidential determination that armed hostilities exist or a declaration of war by the Congress.

"national emergency short of war" - Any condition:

a. As determined by the President or the Congress that threatens national security;

b. Declared or confirmed by the Secretary of Defense or his designated representative as an "AIR DEFENSE EMERGENCY" or "DEFENSE EMERGENCY;" or

c. In which armed hostilities are considered imminent by the Secretary of Defense or his designated representative.

"adjunct" - Joined or added to the Department of Defense but not essentially a part of it.

"operational control" - Those functions of command (military) involving the assignment of tasks, the designation of objectives and the authoritative direction necessary to accomplish the mission. Operational control should be exercised by the use of the assigned normal organizational units (FAA operational elements) through their responsible commanders (Head, FAA Operational Element), by the commander (military) exercising operational control or by the commanders of subordinate forces. It does

not include such matters as administration, discipline, internal organization, and training.

"FAA operational element" - A facility or service of the FAA that directly or indirectly performs an operational function in the support of military objectives. It includes but is not limited to: Air Route Traffic Control Centers, Flight Service Stations, Terminal Facilities, Central Altitude Reservation Function, and National Flight Data Center.

### ARTICLE II. WARTIME RELATIONSHIPS

1. In the event of and upon being so ordered by the President, the Agency will function as an adjunct of the Department of Defense.

a. The Agency shall remain organizationally intact. The Administrator shall retain responsibilities for administration of his statutory functions subject to the authority, direction, and control of the Secretary of Defense, to the extent deemed by the Secretary of Defense to be necessary for the discharge of his responsibilities as Secretary of Defense.

b. To the extent deemed by the Secretary to be necessary for the accomplishment of the military mission by the appropriate military commanders, the Secretary may direct the Administrator to place FAA operational elements under the direct operational control of such military commanders.

2. In the implementation of paragraph 1 above, the Administrator will be responsible to the Secretary of Defense for:

a. Continuing Agency functions subject to such direction as deemed essential by the Secretary.

b. Recommending proper employment of FAA resources in a national defense role.

c. Providing information on the status of FAA operational elements.

d. Assigning to the operational control of the appropriate military commanders such personnel and facilities of the Agency as may be designated by the Secretary.

e. Performing such tasks as may be assigned, which may include but shall not be limited to:

(1) Providing air traffic control services in accordance with national defense requirements.

(2) Providing air movement information and services necessary to effect identification of air traffic.

(3) Providing air surveillance information and services as necessary, to support the military air surveillance network.

(4) Providing specialized radar control to military aircraft as required in performance of tactical missions.

(5) Collecting and reporting information in the following areas:

(a) Surviving civil air facilities capable of recovering and/or supporting military aircraft.

(b) Nuclear detonations and damage information, including radiological contamination.

(6) Making available any existing alternate means of communication.

(7) Flight information programs and services pertaining thereto.

(8) Civil defense support, including assistance in arranging for aerial surveillance and monitoring.

(9) Providing logistical, maintenance, engineering and procurement support as needed.

3. When so ordered by the President, the Agency will resume the status as provided in the Federal Aviation Act of 1958, as amended.

### **ARTICLE III. EMERGENCIES SHORT OF WAR**

1. In national emergencies short of war, the FAA will respond within its statutory responsibilities and resources to military requirements in a manner which will assure that essential national defense requirements are satisfied.

Jointly prepared contingency plans or agreements will be developed and will identify the need for FAA responsiveness in the following typical functional areas:

a. Providing information on the status of FAA operational elements.

b. Providing air traffic control services in accordance with national defense requirements.

c. Providing air movement information and services necessary to effect identification of air traffic.

d. Providing air surveillance information and services as necessary, to support the military air surveillance network.

e. Providing specialized radar control to military aircraft as required in performance of tactical missions.

f. Making available any existing alternate means of communications.

g. Establishing special rules or regulations or waiving existing rules or regulations to meet essential national defense requirements.

h. Providing logistical, maintenance, engineering, and procurement services.

2. The provisions of paragraph 1 of this Article are not intended to derogate from or diminish the functions or responsibilities of the FAA in support of national defense requirements in situations other than national emergencies short of war. Planning for such situations will continue.

### **ARTICLE IV. PLANNING PREMISES**

1. Primary DOD requirements as they relate to FAA capabilities are in the areas of surveillance and control of the navigable airspace.

2. DOD and FAA, for planning purposes, shall assume that the relationships set forth in Articles II and III will obtain and will direct the preparation of contingency plans by appropriate counterpart elements of the two organizations covering each situation; i.e.:

a. If in the event of war the FAA is made an adjunct of the DOD (Article II), and

b. In a national emergency short of war (Article III).

3. The success of military air operations during war will be influenced by control of the volume and operation of all aircraft, and in such a situation, national defense requirements must take precedence. Accordingly, operational control of the navigable airspace in the event FAA becomes an adjunct of the DOD, will be exercised through the command chain running from the Secretary of Defense through the Joint Chiefs of Staff, the Commanders of the Unified and Specified Commands, to designated commanders of subordinate forces. During an emergency short of war, operational control of FAA elements will be exercised through established FAA organizational channels.

4. To the extent consistent with the peacetime responsibilities and resources of FAA, systems configuration should be compatible with wartime requirements. Although the lines of authority may be modified with the transition to war, the operational systems configuration, including manning, equipment, communications and procedures, should be functionally and organizationally capable of assuming the wartime role or responding in a national emergency short of war.

5. The Air Defense and Air Traffic Control facilities will continue to be integrated when operational and economic advantages are evident. When combat capability for weapons commitment and control is planned, military manning will be provided for this function.

6. In event of degradation of FAA capabilities during wartime, augmentation and/or assistance to FAA facilities and personnel will be accomplished as required to fulfill the military mission through use of military resources assigned by the military commander exercising operational control.

7. There will be a continuing DOD need for trained military personnel and military air traffic control equipment for special military operations, particularly in oversea areas, whether FAA becomes an adjunct of the DOD or remains an autonomous agency. Pertinent military directives will identify the tasks requiring the use of military personnel and the use of civilian personnel. The status, obligations and privileges of FAA and DOD civilian personnel, in similar circumstances, will be the same.

8. The DOD and FAA will provide information to each other to assist in the determination of their requirements to effect the postures contemplated under this Memorandum of Understanding.

9. Any relationships as set forth in E.O. 11161 and in this Memorandum of Understanding must recognize the relationship and obligation that necessarily exists between FAA and other governmental agencies such as the Office of Emergency Planning, Department of Commerce, etc. Specifically, Executive Orders, such as 11003 which require the utilization of FAA functions, services, and capabilities in

conjunction with other governmental and non-governmental organizations, must be recognized and considered in the development of DOD/FAA plans for wartime roles, missions, and relationships.

#### **ARTICLE V. PLANNING PROGRAM**

Upon execution of this Memorandum of Understanding, implementing directives will be coordinated and exchanged between the signatories and thereafter will be issued by each to their respective echelons of organization that will cause the required plans to be formulated. Differences which may arise and remain unresolved at the field planning level, will be resolved through appropriate channels of the signatories to this Memorandum of Understanding.

#### **APPROVED:**

(s) Cyrus Vance

**CYRUS VANCE**

**DEPUTY SECRETARY OF DEFENSE**

**DATE: March 7, 1966**

(s) William F. McKee

**WILLIAM F. MCKEE**

**ADMINISTRATOR**

**FEDERAL AVIATION AGENCY**

**DATE: April 13, 1966**

## Appendix 2.

### MEMORANDUM OF AGREEMENT BETWEEN DEPARTMENT OF TRANSPORTATION, FEDERAL AVIATION ADMINISTRATION, AND THE U.S. ARMY—THE U.S. NAVY—THE U.S. AIR FORCE

WHEREAS, by virtue of Section 307(b)(4) of the Federal Aviation Act of 1958 (49 U.S.C. 1348 (b)(4)), the Administrator of the Federal Aviation Administration (hereinafter referred to as the FAA) is authorized to provide necessary facilities and personnel for the regulation and protection of air traffic; WHEREAS, by virtue of Section 303(d) of the Federal Aviation Act of 1958 (49 U.S.C. 1344 (d)), the Administrator of the FAA may make such provision as he shall deem appropriate authorizing, with its consent, the performance of any function under Section 307 (b) of the Act by any other Federal department; and

WHEREAS, there are three separate agreements now in effect between the FAA and the Army, Navy, and Air Force, respectively, relating to the operation of air traffic control facilities on military installations; and

WHEREAS, all parties to the three existing agreements wish to supersede such agreements with this separate agreement between the FAA and the three military services;

NOW, THEREFORE, all parties to this agreement mutually agree as follows:

#### Article I. Determination of Operational Responsibility

A. In keeping with requirements of national defense and with due regard for budgetary, manpower and all other pertinent considerations, the general allocation of responsibility for the operation of each military facility subject to this agreement shall be mutually determined at the national level between the FAA and the appropriate military service. To facilitate the determination of operational responsibility, recommendations concerning the operation of air traffic control facilities will be made at the local level by appropriate FAA and military personnel.

B. Unless agreement is reached to the contrary, the military services shall provide airport traffic control service (visual flight rules) at those military airports where the cognizant military authority deems that such service is required and said airports are not served by an FAA, State, municipal, or other non-Federal tower.

C. When it is mutually agreed to be more advantageous to establish independent military and FAA approach control facilities, the approach control authority for the military terminal area ordinarily will be delegated to the military. Prior to approval by FAA of this delegation of authority, the military facility must be equipped to transmit and receive on all frequencies necessary to control all categories of IFR traffic normally operating in the area. Additionally, a Letter of Agreement relating to the control of air traffic shall be consummated between the appropriate local military authority and the appropriate FAA air route traffic control center.

D. The FAA is authorized to assign an Air Traffic Representative (ATREP) to each military approach control facility covered in Article 1., Section C. The function of the ATREP is set out in detail in Article IV.

E. At all military locations not served by an ATREP, authorized FAA personnel may make evaluations of military approach control facilities and those military towers and military ASR/PAR units that exchange control of air traffic directly with FAA facilities. These evaluations are to be conducted at such times as are mutually agreeable to the FAA and the cognizant local military authority. The purpose of such evaluations is to determine whether equipment performance and staffing are adequate for the service being provided; whether personnel qualifications, Certification and performance meet acceptable standards; and whether procedures utilized are consistent with the agreements provided for in Article 1.C and Article V. All deficiencies which may affect flight safety shall be reported to cognizant military authority for timely corrective action.

F. Delegation of approach control authority may be temporarily suspended by a representative of the FAA area manager or the ATREP if such action is deemed necessary in the interest of flight safety. The commanding officer (or his designated representative) of the affected military installation shall be notified prior to the time suspension action is taken and informed of the reasons therefore.

G. Withdrawal of any delegation of authority covered by this agreement shall not be authorized prior to approval of FAA and the appropriate military service at the national level.

## **Article II. FAA Operations on Military Installations**

**A.** Where mutually agreed, the FAA will provide exclusive air traffic control services and staffing on military installations. Unless agreed to the contrary, where a military facility is located near an FAA approach control facility, the FAA will perform the approach control function from the FAA facility for both the military and non-military facilities.

**B.** At jointly-staffed air traffic control facilities located on military installations, unless agreed to the contrary, the FAA will staff the approach control (surveillance radar) function and the military service will staff and be responsible for the precision approach radar (PAR) function.

**C.** The FAA shall have full authority and responsibility for the operation of its authorized functions.

**D.** The basic radar system approved for use in the radar approach control function is of the airport surveillance radar (ASR) type. Proposals for use of radar systems other than the ASR shall be submitted to the Washington Office of the FAA for review. This clause shall not affect those terminal facilities currently utilizing other radar systems, nor is it intended to limit the use of ARSR or other slower RPM systems to supplement ASR equipment.

## **Article III. Cross-Training at Jointly-Staffed ATC Facilities**

In the best interest of the FAA and military services, it is essential that organized cross-training be accomplished; accordingly cross-training programs shall be implemented and training shall be conducted to the maximum extent possible.

**A.** At the request of the responsible local military authority, the FAA will provide on-site approach control training to designated military personnel. Qualification and training shall be carried out in accordance with FAA regulations and procedures. Military personnel who successfully complete the training program and receive appropriate FAA certificates and ratings are not required to maintain currency on approach control positions. However, qualified military controllers, where current by FAA and military supervisors, may be assigned to approach control positions without direct supervision.

**B.** At the request of the FAA facility Air Traffic Manager the appropriate military authority will provide on-site precision approach radar (PAR) training to designated FAA personnel. Qualification and training shall be carried out in accordance with military regulations and procedures. FAA personnel are not required to maintain currency on PAR positions. However, qualified FAA controllers, when current

by military standards and when agreeable to both military and FAA supervisors, may be assigned to PAR control positions without direct supervision.

## **Article IV. FAA Air Traffic Representatives**

**A.** The ATREP is responsible to the Area Air Traffic Branch. His function is described as follows:

1. To serve as liaison officer between the military and the FAA and between the military and civil users; to resolve local air traffic problems between military and civil users of the terminal area in order that both are afforded the maximum service possible; and, to conduct frequent liaison with FAA, civil and military personnel to determine the adequacy of ATC service is being rendered.

2. To serve as technical advisor to the military in all phases of air traffic control in order to improve ATC service.

3. To evaluate the amount of airspace required for air traffic control in terminal areas, and to coordinate approval of airport traffic patterns.

4. To continuously review existing air traffic control and communications procedures and practices, and to recommend action for their revision to improve efficiency.

5. To participate in appropriate intra-military meetings in which the FAA has an interest.

6. To encourage lecture and training programs for base pilots and civil air user groups, and to recommend changes, if necessary, to improve the air traffic control facility training program and to obtain maximum utilization of personnel.

7. To administer Control Tower Operator Exams and issue appropriate FAA certificates and ratings.

8. To participate frequently in flights of various types of unit-equipped military aircraft (in which flight as a passenger or crew member is permitted) for the purpose of evaluating, from the pilot's viewpoint, air traffic control services being rendered and the performance characteristics of aircraft employed at the base.

**B.** The ATREP will be an FAA signatory to agreements made pursuant to Article I., Section C.

## **Article V. Local Agreements at FAA-Staffed Military Installations**

At military installations where FAA staffing is provided in whole or in part, a local memorandum of agreement shall be signed between FAA and appropriate military authority. The purpose of the local agreement is to further implement this agreement. Such agreements should cover details such as oper-

ational concepts, staffing, training, maintenance of equipment, utilization of space, parking and janitorial service, and security.

#### **Article VI. Financing**

**A.** Salary, travel and training expenses of FAA Air Traffic Representatives, Air Traffic Controllers, and other personnel furnished by the FAA, pursuant to this Agreement, will be borne by the FAA.

**B.** Salary, travel and training expenses of military and civilian personnel furnished by the DOD, pursuant to this Agreement, will be borne by the appropriate DOD component.

**C.** The cost of providing normal support (utilities, office space furniture, parking space, janitorial services and supplies, etc.) to FAA personnel at jointly-staffed air traffic control facilities located on military installations, pursuant to this Agreement, will be borne by the host DOD component authority exercising jurisdiction over the military installation involved.

**D.** Except as otherwise specifically agreed between the parties concerned, the cost of procuring new equipment and joint facilities to accommodate primarily a military requirement, pursuant to this Agreement, will be borne by the host component of the DOD.

**E.** The cost of procuring new facilities and equipment to accommodate primarily an FAA requirement, pursuant to this Agreement, will be borne by the FAA.

**F.** Except as otherwise specifically agreed between the parties concerned, the cost of installing and maintaining equipment will be borne by the party to this Agreement which has the responsibility for the air traffic control function being performed.

**G.** Agreements which include financing arrangements, other than the three separate agreements referred to in the preamble to this agreement, are not superseded by this article.

#### **Article VII. Miscellaneous Provisions**

**A.** Local military authority will determine the security clearances required of FAA personnel. FAA personnel will be subject to military security requirements and base regulations.

**B.** The military services shall inform the FAA at the earliest practicable date of plans to deactivate military bases at which FAA personnel are assigned. The FAA shall inform the appropriate military service at the earliest practicable date of plans to reduce services at or to abandon ATC facilities on military installations.

**C.** Differences which may arise and remain unresolved at the local level will be resolved through appropriate channels of the signatories to this Memorandum of Agreement.

The FAA and the three military services agree to be bound by all provisions of this agreement as indicated by the signature of their duly authorized officials.

##### **UNITED STATES ARMY**

By(s) A.S. Collins, Jr.

Title Asst. Chief of Staff for Force Development

Date 10 June 1969

##### **UNITED STATES NAVY**

By(s) Thomas F. Connolly

Title Deputy Chief of Naval Operations (Air)

Date 2 June 1969

##### **UNITED STATES AIR FORCE**

By(s) John W. Vogt, Maj. Gen. USAF

Asst. Deputy Chief of Staff Plans and Operations

Date 26 June 1969

##### **DEPARTMENT OF TRANSPORTATION, FEDERAL AVIATION ADMINISTRATION**

By(s) D.D. Thomas

Title Deputy Administrator

Date 17 July 1969

## **Appendix 3.**

### **MEMORANDUM OF UNDERSTANDING BETWEEN AIR EDUCATION AND TRAINING COMMAND AND FEDERAL AVIATION ADMINISTRATION CONCERNING INTERAGENCY LIAISON**

#### **1. PURPOSE**

This memorandum of understanding establishes procedures and responsibilities of an interagency liaison between the Air Education and Training Command (AETC) and the Federal Aviation Administration (FAA) to assist in the accomplishment of the AETC mission.

#### **2. EFFECTIVE DATE**

This memorandum of understanding becomes effective when signed by both parties.

#### **3. RESPONSIBILITIES OF THE FAA LIAISON OFFICER TO AETC**

- a. The FAA liaison officer shall be assigned to AETC Headquarters.
- b. This position serves as the principal liaison for all FAA matters with AETC and coordinates with AETC on behalf of the FAA with respect to the AETC mission.
- c. The liaison officer serves on the staff of the Commander, AETC to provide recommendations and advice regarding the operational capabilities and limitations of the FAA with respect to the AETC mission.
- d. The liaison officer assists the AETC staff in providing recommendations to insure that AETC planning programs are compatible with FAA air traffic control plans, policies and procedures.

#### **4. RESPONSIBILITIES OF THE AETC TO THE FAA LIAISON OFFICER**

Provide access to briefings and information that may impact the National Airspace System or affect FAA facilities in order to effectively provide assistance to the AETC mission.

#### **5. FISCAL AND ADMINISTRATIVE CONTROL**

- a. Administrative control of the FAA liaison officer shall remain with the FAA.

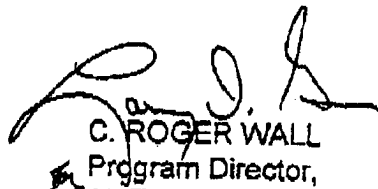
- b. The FAA will pay all salaries and FAA initiated expenses of the liaison officer.
- c. AETC will pay for all command initiated expenses of the liaison officer.
- d. In accordance with procedures established by the Commander, Air Education and Training Command, AETC will furnish the FAA Liaison Officer with office space, facilities, equipment, supplies and privileges as befit a Senior Staff Officer. Facilities, equipment, and supplies will be furnished on a nonreimbursable basis and budgeted by AETC.
- e. The FAA liaison officer shall possess a top secret clearance.

#### 6. TERMINATION OF AGREEMENT

This agreement will remain in effect until terminated by either party upon 90 days advance written notice.



CHARLES H. COOLIDGE, JR., Major General, USAF  
Director, Plans and Operations  
Air Education and Training Command  
Date:



C. ROGER WALL  
Program Director,  
Air Traffic Operations  
Federal Aviation Administration  
Date:



## **Appendix 4.**

### **MEMORANDUM OF UNDERSTANDING BETWEEN AIR COMBAT COMMAND AND FEDERAL AVIATION ADMINISTRATION CONCERNING INTERAGENCY LIAISON**

#### **1. PURPOSE**

This memorandum of understanding establishes procedures and responsibilities of an interagency liaison between the Air Combat Command (ACC) and the Federal Aviation Administration (FAA) to assist in the effective accomplishment of the ACC mission.

#### **2. EFFECTIVE DATE**

This memorandum of understanding becomes effective when signed by both parties.

#### **3. RESPONSIBILITIES OF THE FAA LIAISON OFFICER TO ACC**

- a. The FAA liaison officer shall be assigned to ACC Headquarters.
- b. This position serves as the principal liaison for all FAA matters with ACC and coordinates with ACC on behalf of the various organizations within the FAA.
- c. The liaison officer serves as a staff advisor to the Deputy Director for Operations (DO) at ACC Headquarters and to subordinate headquarters to provide advice regarding the operational capabilities and limitations of the FAA. The liaison officer recommends to the DO and his staff on the availability and utilization of FAA facilities and equipment, and current air traffic control procedures to effectively accomplish ACC's global mission, both for peace time training and actual tactical operations incident to limited war or threats of war.
- d. The liaison officer assists the ACC Headquarters staff in providing recommendations to insure that ACC planning programs are compatible with FAA air traffic control plans, policies and procedures.

#### **4. RESPONSIBILITIES OF THE ACC TO THE FAA LIAISON OFFICER**

- a. ACC shall provide access to essential briefings and information that may affect FAA facilities or the National Airspace System in order to effectively provide assistance to the DO and the DO's staff.

b. During tactical training missions, national emergencies or contingency movements, ACC shall provide access to the Battle Staff to assist in coordination with affected FAA facilities.

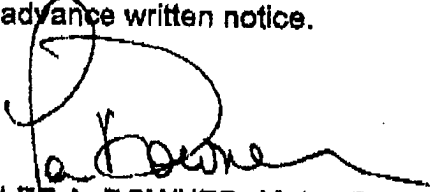
## 5. FISCAL AND ADMINISTRATIVE CONTROL

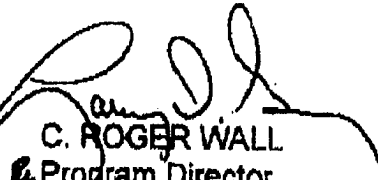
- a. Administrative control of the FAA liaison officer shall remain with the FAA.
- b. The FAA will pay all salaries and FAA initiated expenses of the liaison officer.
- c. ACC will pay for all command initiated expenses of the liaison officer.
- d. The FAA liaison officer shall possess a top secret clearance.

e. In accordance with procedures established by the Commander, Air Combat Command, ACC will furnish the ACC Headquarters FAA Liaison Officer with office space, facilities, equipment, supplies and privileges as befit a Senior Staff Officer. Facilities, equipment, and supplies will be furnished on a nonreimbursable basis and budgeted by ACC.

## 6. TERMINATION OF AGREEMENT

This agreement will remain in effect until terminated by either party upon 90 days advance written notice.

  
LEE A. DOWNER, Major General, USAF  
Director of Operations  
Air Combat Command  
Date:

  
C. ROGER WALL  
Program Director  
Air Traffic Operations  
Federal Aviation Administration  
Date:

## **Appendix 5.**

### **MEMORANDUM OF UNDERSTANDING BETWEEN THE DOMESTIC AIR INTERDICTION COORDINATION CENTER AND THE FEDERAL AVIATION ADMINISTRATION CONCERNING INTERAGENCY LIAISON**

#### **1. BACKGROUND**

The Domestic Air Interdiction Coordination Center (DAICC), U.S. Customs Service, March AFB, Riverside, California was established by Presidential Decision Directive 14 to focus primarily upon the interdiction of domestic air trafficking threats. The DAICC will participate in the detection, monitoring, and sorting of suspect drug trafficking aircraft to the extent necessary to accomplish its interdiction mission. The DAICC will have a corollary mission of coordinating U.S. Customs air support to federal, state and local law enforcement elements conducting criminal investigations within and outside the continental United States. It will employ Department of Defense operational assets under tactical control of the Director, DAICC.

#### **2. PURPOSE**

It is the purpose of this document to set forth mutually agreed interagency liaison arrangements between the Domestic Air Interdiction Coordination Center (DAICC) and the Federal Aviation Administration (FAA) to assist in the safe accomplishment of the DAICC air interdiction mission with respect to the FAA air traffic control mission.

#### **3. EFFECTIVE DATE**

This memorandum of understanding is effective when signed by both parties.

#### **4. RESPONSIBILITIES OF THE FAA LIAISON OFFICER TO DAICC**

a. This position serves as the principal liaison for all FAA matters with the DAICC and coordinates with the DAICC on behalf of the FAA with respect to the DAICC mission.

b. The liaison officer serves on the staff of the Director, DAICC, March AFB, Riverside, California to provide advice regarding the operational capabilities and limitations of the FAA with respect to the DAICC and U.S. Customs Service mission.

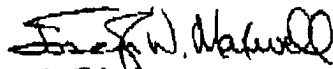
c. The liaison officer assists the DAICC staff in providing recommendations to ensure that DAICC and U.S. Customs Service operations are compatible with FAA air traffic control plans, policies and procedures.

## 5. FISCAL AND ADMINISTRATIVE CONTROL

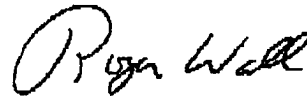
- a. Administrative control of the FAA liaison officer shall remain with the FAA.
- b. The FAA will pay for all salaries and FAA initiated expenses of the liaison officer.
- c. DAICC will pay for all DAICC initiated expenses of the liaison officer.
- d. In accordance with procedures established by the Director, DAICC, DAICC will furnish the FAA liaison officer with such office space, facilities, equipment, supplies and privileges as befit the status of the liaison officer assigned to the Director's staff. Facilities, equipment and supplies will be furnished on a non-reimbursable basis and budgeted by the DAICC.

## 6. TERMINATION OF AGREEMENT

This agreement will remain in effect until terminated by either party upon 90 days advance written notice.

  
3-26-96

Joseph W. Maxwell  
Director, DAICC  
U.S. Customs  
Date:



C. Roger Wall  
Program Director, Air Traffic Operations  
Federal Aviation Administration  
Date:

## Appendix 6.

# MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENT OF DEFENSE AND THE FEDERAL AVIATION ADMINISTRATION CONCERNING THE JOINT OPERATIONAL USE OF THE MILITARY IFF SYSTEM AND THE CIVIL AIR TRAFFIC CONTROL RADAR BEACON SYSTEM (ATCRBS)

## 1. PURPOSE

This Memo of Understanding prescribes DOD/FAA agreements, duties, and responsibilities necessary to insure the efficient and equitable joint operational use of the military IFF and the civil Air Traffic Control Radar Beacon Systems.

## 2. TERMS OF THE AGREEMENT

a. The military IFF Mode 3 and the ATCRBS Mode A are standardized as the common military/civil system Radar beacon Mode 3/A.

b. The FAA and DOD will continue to support the use of Mode 3/A, for ATC purposes, by military/civil international organizations.

c. The "U.S. National Standard for the Mark X (SIF)/ Air Traffic Control Radar Beacon System Characteristics" shall be used to insure:

(1) That technical parameters, tolerances, characteristics, and techniques meet the operational requirements of the common military civil system.

(2) Compatibility between all appropriate elements of the common system.

d. Mode 3/A shall be reserved for:

(1) The provision of ATC services by military/ATC facilities.

(2) The identification of aircraft by air defense facilities.

(3) Any required control of all air defense aircraft.

e. The FAA will provide, maintain, and assume operational control for the ground interrogators and ancillary processing equipment at all FAA and joint use RAPCON facilities where beacon services are required for the control of air traffic on Mode 3/A.

f. Both agencies will cooperate voluntarily to avoid interference caused by the joint use of the common Radar Beacon System.

g. The expansion of the Radar Beacon System will not be opposed by either agency, but mutually, the obligation is recognized to coordinate continued development of various components for their respective portion of the system to assure maximum prac-

ticable operational utility at all times. Any developments which may affect system compatibility and performance will be coordinated between the DOD Advisory Committee on Federal Aviation and the Associate Administrator for Air Traffic. Coordination on the day to day operation of the system will be conducted by the operating services concerned.

h. The code assignment on the additional Modes 1 and 2 of the military IFF system and Modes B and D of the civil ATCRBS will be the responsibility of the respective agency. The ATCRBS Modes B and D are not contemplated for operational use and unless covered by additional agreement will not be proposed for implementation by military airborne or ground facilities.

i. The use of Mode C shall be reserved for altitude (height) reporting purposes with a code structure as contained in the U.S. National Standards.

j. Code 7700 shall be used on Mode 3/A, as specified in the U.S. National Standard, to aid in recognizing an aircraft in an emergency condition.

k. Code 7600 shall be used on Mode 3/A, as specified in the U.S. National Standard, to aid in the recognizing an aircraft with two way communications failure.

l. All DOD and FAA ATC facilities shall monitor Mode 3/A, code 7700. All DOD and FAA facilities capable of displaying unique alert indicators associated with the receipt of code 7600 or 7500 shall monitor the Mode 3/A codes which generate the alert indicators.

m. The following Mode 3/A codes are assigned exclusively to the DOD for use:

(1) Within the National Beacon Code Allocation Plan (NBCAP) airspace, 256 octal codes; 5000-5077, 5400-5477, 6100-6177, and 6400-6477.

Note.—NBCAP airspace is the airspace over the U.S. territory located within the North American continent between Canada and Mexico, including adjacent territorial waters outward to about the inner boundaries of Oceanic Control Areas (CTA)/Flight Information Regions (FIR).

(2) Outside NBCAP airspace, 1088 octal codes, 5000-7077. These codes may also be used by the

DOD in warning areas within NBCAP airspace provided approval is obtained from the appropriate FAA region to insure that there will be no adverse impact upon any FAA ATC facility.

(3) Code 7777 shall be used exclusively by interceptor aircraft on active air defense missions and operating without an ATC clearance.

Note.—These aircraft will be operating under the FAA Authorization for Interceptor Operations (AFIO).

n. All DOD Mode 3/A code Allocations are specified in the National Beacon Code Allocation Plan (FAA Order 7110.66 and subsequent revisions). However, the codes assigned exclusively to the DOD, in this agreement, shall not be changed without mutual FAA and DOD consent.

o. Control, assignment, and bookkeeping of Mode 3/A codes designated for the exclusive use of the DOD, shall be the responsibility of CINCNORAD.

p. All codes not specifically designated for exclusive use by the DOD shall be reserved by the FAA and used as indicated in the NBCAP.

q. Where required, the respective agencies/military commands will issue directives to implement the terms of this agreement.

r. This agreement is effective on July 1, 1986 and it cancels the Memorandum of Understanding Between the DOD and FAA (Joint Operational Use of the Military IFF System and the Common System Air Traffic Control Radar Beacon System effective on October 1, 1975).

APPROVED

(s) Thomas S. Falatko  
THOMAS S. FALATKO  
Department of Defense  
24 January 1986

APPROVED

(s) John R. Ryan  
JOHN R. RYAN  
Director, Air Traffic Operations Service  
November 6, 1985

## Appendix 7.

# MEMORANDUM OF UNDERSTANDING BETWEEN FEDERAL AVIATION ADMINISTRATION AND DEPARTMENT OF DEFENSE

### ARTICLE 1—AUTHORITY

This Memorandum of Understanding (MOU) is entered into between the Federal Aviation Administration (FAA) and the Department of Defense (DOD). The FAA is entering into this MOU pursuant to statutory authority contained in Section 307(a) and (c) of the Federal Aviation Act of 1958, as amended.

### ARTICLE 2—PURPOSE

This Memorandum of Understanding identifies the methods by which the FAA will provide Air Traffic Control services in the National Airspace System (NAS) to DOD aircraft which are involved in drug interdiction missions. FAA recognizes that DOD desires to conduct flight operations under IFR flight rules, to the extent practicable.

### ARTICLE 3—SCOPE

The Memorandum of Understanding will apply at all FAA/DOD ATC facilities and to all DOD aircraft participating in drug interdiction mission in the NAS.

### ARTICLE 4—EFFECTIVE DATE

This Memorandum of Understanding is effective when signed by both parties. In the event of an inconsistency between this MOU and any other existing agreement, the provisions of this MOU take precedence.

### ARTICLE 5—REVIEW CYCLE

This Memorandum of Understanding will be reviewed annually and amended as necessary.

### ARTICLE 6—TERMINATION

This Memorandum of Understanding may be terminated by mutual consent of the parties or any time upon ninety days written notice of termination by either party.

### ARTICLE 7—POLICY

A. IFR service will be provided in controlled airspace. Safety of flight affecting the chase aircraft,

suspect aircraft and non-participants will be of primary concern in all decisions made by the FAA. Additionally, under no circumstances will FAA derogate separation criteria.

B. Chase aircraft must request and receive approval for any change of heading/course and/or altitude.

C. When the controller is unable to continue IFR service for the interdiction mission, pilots may elect to continue the mission under VFR flight rules.

D. Launches for the purpose of intercept will be treated as active air defense scrambles and conducted within existing procedures. When it is known that the launch is for the purposes of drug interdiction, or after aircraft identification, the scramble becomes a drug interdiction mission, this information will be forwarded immediately to the appropriate FAA facility.

E. The primary means of communicating the existence of a drug interdiction mission will be by landline or via automation (i. e. remarks section of the flight plan). DOD pilots may use the word "BOISE" to inform the FAA of the above if the situation warrants.

F. Priority and special handling will be afforded aircraft participating in drug interdiction missions to the extent that this priority does not derogate safety.

G. If the suspect aircraft is participating in the ATC system, the suspect will receive all the services provided by the system, except advisories concerning the chase aircraft, so that the chase aircraft remains undetected.

H. IFR flight through Special Use Airspace (SUA) shall be authorized only when coordination and approval can be obtained by ATC. When approval cannot be obtained, the pilot shall be provided routing around the SUA.

I. Should DOD pilots desire the elimination of traffic advisories or traffic alerts, this request must be made known to the controller.

J. AWACS, or other reconnaissance, orbit requirements and launch procedures will be coordinated with the appropriate FAA facility.

K. NORAD Air Defense Sectors and appropriate ARTCCs will develop and consummate agreements regarding procedures for the transfer of control and communications of aircraft between the appropriate FAA facilities and Sector Operations Control Centers.

L. Documentation pertinent to the conduct of specific missions may on occasion be classified. How-

ever, procedures developed with the FAA to prosecute these mission will be classified no higher than "For Official Use Only." This will provide for timely briefing and access of necessary information to the controller workforce.

M. The controlling FAA facility shall effect coordination with other ATC facilities for IFR or VFR chase aircraft.

William H. Pollard  
Associate Administrator  
for Air Traffic

Frank J. Colson  
Director  
Department of Defense Policy  
Board on Federal Aviation



## Appendix 8.

# MEMORANDUM OF AGREEMENT BETWEEN UNITED STATES AIR FORCE AND FEDERAL AVIATION ADMINISTRATION FOR DISCRETE BEACON CODE ASSIGNMENTS TO USAF AIRCRAFT OPERATING ABOVE FL 600

### I. GENERAL

This Memorandum of Agreement between the United States Air Force (USAF) and the Federal Aviation Administration (FAA) provides agreement on the joint operational use of discrete beacon codes for USAF aircraft that operate above FL 600.

### II. PURPOSE

The purpose of this Memorandum of Agreement is to set forth the assignment of twenty (20) discrete Mode 3/A beacon codes in code block 4400 for exclusive use by USAF aircraft that plan to operate above FL 600.

### III. TERMS OF THE AGREEMENT

The USAF and FAA jointly agree to the use of discrete Mode 3/A beacon codes for USAF flights that plan to operate above FL 600 in accordance with the following:

#### A. FAA shall:

- (1) Reserve discrete Mode 3/A codes 4454 through 4477 (twenty discrete codes).
- (2) Accept one of the above discrete codes as part of an IFR flight plan (Field 04, Discrete Beacon Code Field).
- (3) Insure aircraft remain on the assigned discrete code for the full duration of a flight.

**EXCEPTION:** When unforeseen events, such as weather deviations, equipment failure, etc., cause more than one aircraft with the same Mode 3/A discrete beacon code to be in the same or adjacent

ARTCC's airspace at the same time, a controller may request the pilot to make a code change to a code not specified in the reserved group, to squawk standby, or to stop squawk.

#### B. USAF shall:

- (1) Assure a discrete Mode 3/A beacon code is filed as part of the flight plan from the codes listed A(1) above.

- (2) Insure aircraft assigned the same discrete Mode 3/A beacon codes are not flight planned to operate in the same or any adjacent ARTCC's airspace at the same time.

**C.** The FAA and USAF shall issue appropriate directives to their respective units/commands to insure compliance with the requirements of A and B.

**D.** The FAA or the USAF may without the concurrence of the other party terminate this Agreement with thirty (30) days' advance notice.

#### APPROVED

Raymond G. Belanger  
Director, Air Traffic Service

#### APPROVED

Norman C. Gaddis,  
Brigadier General, USAF  
Deputy Director of Operations  
DCS/Plans and Operations

## Appendix 9.

### MEMORANDUM OF UNDERSTANDING BETWEEN UNITED STATES ATLANTIC COMMAND, UNITED STATES ATLANTIC FLEET, AND FEDERAL AVIATION ADMINISTRATION CONCERNING INTERAGENCY LIAISON

#### 1. PURPOSE

It is the purpose of this paper to set forth mutually agreed interagency liaison arrangements between the United States Atlantic Command (USCINCLANT), the United States Atlantic Fleet (CINCLANTFLT), and the Federal Aviation Administration (FAA) to assist in the effective accomplishment of the USCINCLANT and CINCLANTFLT missions. The FAA Liaison Representative is to be assigned to the USCINCLANT/CINCLANTFLT Headquarters.

#### 2. RESPONSIBILITIES OF THE FAA LIAISON REPRESENTATIVE TO USCINCLANT/CINCLANTFLT

a. Serves as the principal liaison for all FAA matters with USCINCLANT/CINCLANTFLT and coordinates with USCINCLANT/CINCLANTFLT on behalf of the various organizations within the FAA.

b. Serves as advisor to the deputies and chiefs of staff of USCINCLANT/CINCLANTFLT to provide advice regarding the operational capabilities and limitations of the FAA with respect to the USCINCLANT and CINCLANTFLT missions. He shall also provide advice regarding International Civil Aviation Organization (ICAO) matters pertaining to operations over international waters.

c. Assists the USCINCLANT and CINCLANTFLT staffs in planning programs that are international in scope and provides recommendations to insure that the programs are compatible with FAA and ICAO traffic control plans, policies, and procedures.

d. Provides liaison services upon the request of and under the direction of the U.S. military elements of the headquarters staff of the Allied Command, Atlantic, a major command of the North Atlantic Treaty Organization.

#### 3. FISCAL AND ADMINISTRATIVE CONTROL

a. Administrative control of the FAA Liaison Representative shall remain with the FAA. The FAA will pay all salaries and expenses of the Liaison Representative.

b. In accordance with procedures established by CINCLANTFLT, the FAA Liaison Representative will be furnished with office space, equipment, supplies, and privileges as befit the status of the Liaison Representative assigned to the headquarters. Facilities, equipment, and supplies will be furnished on a nonreimbursable basis and budgeted for by CINCLANTFLT.

#### 4. TERMINATION OF AGREEMENT

This agreement will remain in effect until terminated by either party upon 90-days' advance written notice.

(s) Lee Baggett, Jr.  
LEE BAGGETT, JR.  
Admiral, U.S. Navy  
Commander in Chief  
U.S. Atlantic Command  
21 February 1987

(s) Frank B. Kelso  
FRANK B. KELSO  
Admiral, U.S. Navy  
Commander in Chief  
U.S. Atlantic Fleet  
21 February 1987

(s) Donald D. Engen  
DONALD D. ENGEN  
Administrator  
Federal Aviation Administration  
5 May 1987

## Appendix 10.

# MEMORANDUM OF UNDERSTANDING BETWEEN U.S. NAVAL PACIFIC FLEET AND FEDERAL AVIATION ADMINISTRATION CONCERNING INTERAGENCY LIAISON

### 1. PURPOSE

It is the purpose of this paper to set forth mutually agreed interagency liaison arrangements between the U.S. Pacific Fleet (CINCPACFLT) and the Federal Aviation Administration (FAA) to assist in the effective accomplishment of the CINCPACFLT mission. The majority of CINCPACFLT's exercise/airspace coordination with the FAA is in the eastern Pacific area adjacent to the west coast of the Continental United States. The Commander Third Fleet (COMTHIRDFLT) is the executive agent for CINCPACFLT for airspace management. COMTHIRDFLT's representative for airspace management (in the Southern California operating areas) is the Commanding Officer, Fleet Area Control and Surveillance Facility (FACSFAC) San Diego. The FAA liaison officer will be located at FACSFAC San Diego.

### 2. RESPONSIBILITIES OF FAA LIAISON OFFICER TO CINCPACFLT

a. Although principally concerned in areas which the Air Traffic Service has the responsibility within the FAA, this position serves as the principal liaison point for all FAA matters with the Pacific Fleet, procuring for CINCPACFLT information and data from the various sources within FAA and coordinating with the Atlantic Fleet on behalf of the various services in the FAA.

b. Serves as a staff advisor to the Deputy and Chief of Staff CINCPACFLT or his designated representative at San Diego Headquarters to provide advice regarding the operational capabilities and limitations of the FAA air navigation and air traffic control system with respect to the CINCPACFLT mission. He shall also provide advice regarding ICAO matters pertaining to operations over international waters.

c. Assists the Headquarters U.S. Pacific Fleet staff in planning programs that are international in scope

and provides recommendations to insure that the programs are compatible with FAA and ICAO traffic control plans, policies, and procedures.

### 3. FISCAL AND ADMINISTRATIVE CONTROL

a. Administrative control of FAA personnel engaged in providing the required services shall remain with the FAA. The FAA will pay all salaries and expenses of the liaison officer.

b. In accordance with procedures established by CINCPACFLT the FAA liaison officer will be furnished with such office space, facilities, equipment, supplies, and privileges as befit the grade and status of the liaison officer assigned to the Headquarters. Facilities, equipment, and supplies will be furnished on a nonreimbursable basis and budgeted for by CINCPACFLT.

### 4. TERMINATION OF AGREEMENT

This agreement will remain in effect until terminated by either party upon 90-days' advanced written notice.

APPROVED:

DONALD C. DAVIS

Admiral

Commander in Chief

U.S. Pacific Fleet

DATE: February 22, 1979

APPROVED:

LANGHORNE M. BOND

Administrator

Federal Aviation Administration

## Appendix 11.

# MEMORANDUM OF AGREEMENT BETWEEN NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AND DEPARTMENT OF TRANSPORTATION, FEDERAL AVIATION ADMINISTRATION

### GENERAL

This memorandum, made this day by and between the National Aeronautics and Space Administration (NASA) and the Federal Aviation Administration (FAA) of the Department of Transportation, provides for Tactical Air Navigation (TACAN) facility and related support for Space Shuttle flight by FAA to NASA.

Authority to execute this agreement on behalf of the Department of Transportation is vested in FAA. Authority to execute this agreement on behalf of NASA is vested in the Office of Space Transportation Systems.

#### 1. References:

- a. Section 601 of the Economy Act of 1932, as amended, 31 U.S.C. 686.
- b. Section 203(c) of the National Aeronautics and Space Act of 1958, as amended, 42 U.S.C. 2473(c).
- c. NASA letter, October 21, 1976.
- d. FAA letter, November 9, 1976.

### PURPOSE

The purpose of this memorandum is to establish procedures and provisions under which NASA attains TACAN facility and related support from FAA for Space Shuttle flights.

Implementation: This agreement shall be implemented and effective upon approval by parties concerned as denoted by signature of their duly authorized representatives.

### RESPONSIBILITIES

#### General Provisions:

##### a. NASA agrees to the following:

- (1) NASA shall provide to FAA Space Shuttle launch and recovery schedules at least 7 calendar days prior to effective date.
- (2) NASA shall provide launch and recovery schedule changes to FAA as soon as practical but not later than 24 hours in advance. Telephone coordination of changes to the schedule is acceptable when necessary.

(3) NASA agrees to reimburse the FAA for all costs incurred in providing services/materials required by the Space Shuttle which exceed FAA's requirements. These additional costs shall include the expense of electronic equipment modification, as stated in paragraph 4.b.(2) below, and maintenance, as appropriate, including personnel compensation and benefit costs, overtime, travel per diem, and any other expense incurred as a result of requirements under this agreement.

(4) NASA studies may determine that TACAN co-channel or adjacent channel interference exists, and will negotiate with FAA for solution/s to the interference.

(5) TACAN frequency changes necessary in support of this agreement are to be funded by NASA.

##### b. FAA agrees to the following:

(1) FAA shall provide qualified maintenance personnel at NASA designated TACAN facilities in advance of the scheduled launch and recovery mission of the Space Shuttle. The technicians shall perform a facility certification check in both cases and report any operational limitations that cannot be corrected on-site prior to scheduled NASA missions.

(2) FAA, at designated TACAN facilities, will incorporate all the latest available approved electronic equipment modifications (EEM) affecting signal in space characteristics. Any additional costs of these EEM's, over that of normal FAA costs, shall be funded by NASA.

(3) FAA shall advise NASA of any programmed changes in the existing TACAN physical configuration.

(4) FAA shall provide notification of TACAN scheduled maintenance activity requiring facility shutdown no later than 7 days prior to such maintenance. Deviations from this schedule shall be coordinated as soon as practical but not less than 24 hours in advance.

(5) FAA, where adjacent TACAN's or co-channel facility interference occurs with NASA designated TACAN's, will take necessary action to eliminate the interference prior to Space Shuttle

launch and re-entry. FAA will issue any necessary notice to airmen (NOTAM).

(6) FAA shall advise NASA of any TACAN operational limiting factors on the designated TACAN's as they occur.

### **FISCAL AND ADMINISTRATIVE CONTROL**

FAA and NASA agree to the following:

(1) That local area written agreements between FAA regions and NASA will be established to handle specific details germane to a specific local area operation. Local agreements will include NASA priority use of controlled airspace at primary and emergency locations.

(2) That FAA and NASA headquarters will review each local agreement prior to its effective date to ensure compliance with all applicable policies and procedures. FAA agrees to waive its recovery of administrative overhead on local agreements. This waiver is granted by FAA after consideration of the following factors:

(a) FAA stands to gain significant flight data from the NASA mission which will benefit the operation and maintenance of the nation's national airspace system.

(b) It is not anticipated that the NASA mission will place significant demands upon FAA facilities, equipment, or personnel. Therefore, the administrative overhead is expected to be relatively minor.

### **EFFECTIVE DATE AND TERMINATION**

This agreement shall become effective upon approval of parties concerned as denoted by signature of their authorized representatives. This agreement may be terminated unilaterally by either party in consideration of a written notice 180 days in advance. This agreement shall be automatically terminated upon completion of the Space Shuttle Program.

### **AMENDMENT PROVISIONS**

This agreement may be amended during the effective period by making required revisions a matter of record by numbered amendments with the mutual agreement and approval of the signatory parties.

**APPROVED:**

**FOR THE DEPARTMENT OF TRANSPORTATION, FEDERAL AVIATION ADMINISTRATION**

William M. Flener

Associate Administrator for Air Traffic and Airway Facilities

**APPROVED:**

**FOR THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

John F. Yardley

Associate Administrator for Space Transportation System

## Appendix 12.

### **MEMORANDUM OF UNDERSTANDING BETWEEN THE NORTH AMERICAN AEROSPACE DEFENSE COMMAND AND THE FEDERAL AVIATION ADMINISTRATION**

#### **1. PURPOSE**

It is the purpose of this memorandum of understanding to set forth mutually agreed upon arrangements regarding responsibilities and working relationships of The North American Aerospace Defense Command (NORAD) and the Federal Aviation Administration (FAA) to ensure accomplishment of the air defense mission.

#### **2. GENERAL**

2.1 NORAD is charged with the responsibility for defending the North American continent against air attack. In accordance with the NORAD Terms of Reference, CINCNORAD is responsible for the development of plans and policies for the identification and security control of air traffic and the control of electromagnetic radiation. In this regard, CINCNORAD is authorized to coordinate directly with appropriate U.S. and Canadian agencies.

2.2 The authority and responsibilities of the FAA are stated in the Federal Aviation Act of 1958 (Public Law 85-726) 85th Congress. The FAA is charged with the responsibility for the establishment and operation of a common system of air navigation and air traffic control within the United States.

2.3 In discharging its responsibilities, NORAD makes extensive use of the airspace for a variety of operations. These operations are conducted within the framework of the FAA regulatory provisions and with the active assistance and participation of the FAA. Close coordination between NORAD, its component forces and the FAA is imperative to carry out air defense requirements effectively without undue restrictions to civil and nontactical aviation.

#### **3. RESPONSIBILITIES**

##### **3.1. NORAD will:**

3.1.1. Coordinate with the FAA on all matters which impact the National Airspace System in carrying out its mission.

3.1.2. Participate jointly with FAA in the development of plans and implementing instructions and tests for the security control of air traffic and the control of air navigation aids.

3.1.3. Coordinate with the FAA on requirements for prohibiting or restricting flights of aircraft in the interest of air defense.

3.1.4. Exchange with FAA information on nuclear detonations, biological and chemical data and provide fall out prediction data to air traffic control facilities as requested for special locations.

3.1.5. Provide FAA with Defense Conditions (DEFCONS) and air defense warnings when declared by CINC NORAD or when declared by higher authority and affecting the status of NORAD forces.

3.2. The FAA will:

3.2.1. Participate jointly with NORAD in the development of plans and implementing instructions and tests for the security control of air traffic and the control of air navigation aids.

3.2.2. Designate zones or areas essential to the NORAD mission in which it may be necessary to prohibit or restrict flights of aircraft, and the promulgation of regulations for aircraft operation in such zones or areas. Such actions will be requested through the Department of Defense.

3.2.3. Provide liaison to NORAD and its subordinate commands by assigning liaison officers with Headquarters NORAD, NORAD regions and subordinate echelons if required and mutually agreed upon.

3.2.4. Gather, process and furnish air movement data to appropriate air defense facilities in accordance with mutually acceptable procedures for all flights of civil and military aircraft requiring identification in Air Defense Identification Zones, and in other areas and conditions as agreed upon.

3.2.5. Provide air traffic control surveillance, radar control service and information in support of air defense requirements as mutually agreed upon.

3.2.6. Exchange with NORAD information on nuclear detonation, biological and chemical data and provide status and damage information on FAA facilities (includes but is not limited to air route traffic control centers and supporting radar facilities that are solely operated by FAA).

#### 4. LIAISON

4.1. Liaison officers assigned to coordinate interagency matters at the Headquarters NORAD, Regions and subordinate echelons shall be a member of the Commander's staff. Working through appropriate staff channels, the liaison officers duties shall include:

4.1.1. Advising the Headquarters NORAD of the current policies, procedures, operational capabilities and limitations of the FAA with respect to air defense matters.

4.1.2. Effecting coordination with appropriate officers of the FAA on air defense activities.

4.1.3. Participating, as required, in conferences and in the coordination of air defense activities with civil and military agencies.

4.1.4. Assisting in the development, coordination and execution of air defense exercises.

4.1.5. Assisting in the development, coordination and execution of detailed plans for the security control of air traffic and air navigation aids.

4.1.6. In the event of an air defense emergency, be readily available on a 24-hour basis for duty as required by the appropriate headquarters. These personnel will be subject to military security regulations. The FAA will insure that such assigned personnel have a security clearance of SECRET and the HQ NORAD liaison have a TOP SECRET clearance security.

## 5. ADMINISTRATION

### 5.1. NORAD will:

5.1.1. Furnish FAA Liaison Officers to Headquarters NORAD or subordinate echelons with suitable office space, facilities, equipment and supplies. Facilities, equipment and supplies furnished will be on a nonreimbursable basis and will be funded and budgeted for by the USAF.

5.1.2. Issue appropriate orders to assigned FAA Liaison Officers authorizing necessary transportation (including travel on military aircraft), messing, billeting and emergency medical treatment as available at military installations. While performing duty for the NORAD agency concerned, FAA Liaison Officers will be accorded those privileges and courtesies normally accorded officers of equivalent rank.

5.1.3. Pay for all activities initiated by the NORAD.

### 5.2. The FAA will:

5.2.1. Pay all personnel costs and benefits of the FAA liaison officer. Administrative control of FAA personnel shall remain with the FAA.

5.2.2. Pay for all activities initiated by the FAA.

5.3. Requests for air defense services which require additional FAA personnel, equipment and/or communications for which military funds must be provided will be referred by the FAA to Headquarters NORAD for resolution.



G. KEITH McDONALD  
Major-General, CF  
Director of Operations



JEFF GRIFFITH  
Program Director, Air Traffic Operations  
Federal Aviation Administration

18 SEP 1997



## Appendix 13.

### MEMORANDUM OF UNDERSTANDING BETWEEN PACAF AND THE FAA

#### GENERAL

The Pacific Air Forces (PACAF) is charged with the responsibility for defending the State of Hawaii and Pacific Islands against air attack. In accordance with the PACAF Terms of Reference, CINCPACAF is responsible for development of plans and policies for identification and security control of air traffic and the control of electromagnetic radiation. In this regard, CINCPACAF is authorized to coordinate with appropriate U.S. and Host Nation agencies.

The authority and responsibilities of the Federal Aviation Administration (FAA) are stated in the Federal Aviation Act of 1958 (Public Law 85-726), 85th Congress. The FAA is charged with responsibility for establishment and operation of a common system of air navigation and air traffic control within the United States.

In discharging its responsibilities, PACAF makes extensive use of the airspace for a variety of operations. These operations are conducted within the framework of the FAA regulatory provisions and with the active assistance and participation of the FAA. Close coordination between PACAF, its component forces, and the FAA is imperative in order to carry out air defense requirements effectively without restrictions to civil and nontactical aviation.

#### PURPOSE

It is the purpose of this paper to set forth mutually agreed arrangements regarding responsibilities and working relationships of FAA and PACAF to insure accomplishment of the air defense mission.

#### RESPONSIBILITIES

Pacific Air Forces will:

1. Coordinate with the Federal Aviation Administration on all matters of mutual interest and participation in air defense.
2. Participate jointly with the FAA in development of plans for security control of air traffic and control of air navigation aids within the United States and Trust Territories and develop jointly with FAA the test procedures required thereof.
3. Coordinate with the FAA on requirements for prohibiting or restricting flights of aircraft in the interest of defense.

4. Exchange with FAA information on nuclear detonation, biological and chemical data and provide fallout predication data to FAA air traffic control facilities as required for specific locations.

5. Provide FAA air route traffic control centers with DEFCONs and air defense warnings, as appropriate, when declared by CINCPACAF or when declared by higher authority and affecting the status of PACAF forces.

Federal Aviation Administration will:

1. Participate jointly with PACAF in development of plans, implementing instructions and test for the security control of air traffic and the control of air navigation aids.
2. Designate zones or areas essential to the PACAF mission in which it may be necessary to prohibit or restrict flights of aircraft, and the promulgation of regulations for aircraft operations in such zones or areas. Such actions will be requested through the Department of Defense.
3. Provide liaison to PACAF and its subordinate commands by assigning liaison officers with Headquarters PACAF, PACAF regions, and at subordinate echelons as may be required and mutually agreed upon.
4. Gather, process, and furnish air movement data to appropriate air defense facilities in accordance with mutually acceptable procedures for all flights of civil and military aircraft requiring identification in Air Defense Identification Zones and in such other areas and under such conditions as may be agreed upon.
5. Provide air traffic control surveillance, and radar control service and information in support of air defense requirements as mutually agreed upon.
6. Exchange with PACAF information on nuclear detonation, biological and chemical data, and provide status and damage information on FAA facilities (includes, but not necessarily limited to, air route traffic control centers and supporting radar facilities that are solely operated by FAA).

#### LIAISON

The Liaison Officer shall be a member of the Commander's Staff and, working through the appropriate staff section, his duties will include:

1. Advising headquarters of current policies, procedures, operational capabilities and limitations of the FAA with respect to air defense matters.
2. Assisting in formulation of requests, and/or development of services to be performed by the FAA.
3. Effecting coordination, as required, with appropriate offices of the FAA on air defense activities.
4. Participating, as required, in conferences and in coordination of air defense activities with civil and military agencies.
5. Assisting in preparation, maintenance, and execution of air defense exercises.
6. Assisting in preparation, maintenance, and execution of detailed plans for the security control of air traffic and air navigation aids.
7. In the event of defense emergency, be readily available on a 24-hour basis for duty as required by the appropriate headquarters. These personnel will be subject to military security regulations. The FAA will insure that such personnel assigned have a security clearance of SECRET or higher.

#### **ADMINISTRATIVE**

##### **PACAF will:**

1. Furnish FAA Liaison Officers assigned to Headquarters PACAF or subordinate echelons with suitable office space, facilities, equipment, and supplies. Such facilities, equipment and supplies furnished will be on a nonreimbursable basis and will be funded and budgeted for by PACAF.

2. Issue appropriate orders to FAA Liaison Officers assigned, authorizing necessary transportation (including travel on military aircraft), messing, billeting, and emergency medical treatment as available at military installations. While performing duty for the PACAF agency concerned, FAA Liaison Officers will be accorded those privileges and courtesies normally accorded others of equivalent rank.

##### **FAA will:**

1. Pay all salaries and expenses of FAA Liaison Officers and their secretaries. Administrative control of FAA personnel shall remain with FAA.
2. Where resources made available by FAA for air defense purposes may not provide for all the services required, requests for such services which may require additional FAA personnel, equipment, and/or communications for which military funds must be provided will be referred by FAA to Headquarters PACAF for resolution.

##### **APPROVED:**

Robert W. Bazley  
General, USAF  
Commander in Chief  
Pacific Air Forces

##### **APPROVED:**

Donald D. Engen  
Administrator  
Federal Aviation Administration

## Appendix 14.

### HEADQUARTERS FIRST AIR FORCE AND FEDERAL AVIATION ADMINISTRATION MEMORANDUM OF AGREEMENT

#### PURPOSE

This agreement establishes procedures and responsibilities for terminating First Air Force communications in Federal Aviation Administration (FAA) facilities.

#### GENERAL

1. Tactical Air Command is charged with the responsibility of administering, training, and equipping all U.S. Air Force atmospheric defense resources in the continental United States (except Alaska) (including a vast communications network) required by the Commander in Chief, North American Aerospace Defense Command (CINCNORAD), to defend North America. Within Tactical Air Command, this responsibility has been assigned to the Commander, First Air Force. The FAA recognizes this responsibility and the need for adequate communications between First Air Force and FAA facilities in support of the defense effort. Therefore, in the national interest it is agreed that First Air Force communications are authorized to be installed in FAA facilities under conditions and for the purposes specified herein.

2. For purposes of this agreement, the term "FAA facilities" is limited to those locations engaged in active control of aircraft (e.g., air route traffic control centers, approach controls, control towers). FAA radar sites are specifically excluded. Placement of communications equipment in radar sites is worked under the auspices of the Joint Radar Planning Group (JRPC).

3. The necessity for terminating new First Air Force circuits in the FAA facilities or modifying existing configurations results from two basic sources:

a. TAC/First Air Force or NORAD operations plans or procedures may establish requirements at all CONUS air divisions.

b. A special mission assigned an individual air division may require a capability within individual FAA regions.

4. GTE Telecom, Inc., (GTETI) is under contract to the government to provide the communications services necessary to support the Joint Surveillance System (JSS). In this capacity, GTETI shall assist First Air Force in designing and writing specifications for all air defense system communications requirements.

GTETI will also produce and maintain current a "Communications Services Manual," which will contain system, subsystem, and facility descriptions, interfaces, and parameters of GTE and leased services including drawings.

#### ACTION

1. Headquarters First Air Force will coordinate with FAA Washington, Systems Plans and Programs Division (ATR-100), through the Air Defense Liaison Officer (ADLO) at HQ NORAD, any changes contemplated to the design or type of First Air Force circuitry which are to be terminated in FAA facilities.

2. At First Air Force air divisions, the Director of Information Systems (SI) will coordinate all requirements (circuit starts, changes, or disconnects including subsequent amendments to a basic order) affecting the air division with the FAA Air Defense Liaison Officer (ADLO) supporting the First Air Force air division.

3. FAA/ATR-100 will advise all affected FAA regions of their concurrence/approval of new/revised communications at FAA facilities. The air division FAA ADLO will be responsible for direct coordination of the details of the new/modified installation with appropriate FAA facility personnel.

4. First Air Force and the air divisions will advise the FAA as outlined above as soon as practicable after identification of a new requirement with as much detail as is available at that time. For new types of services, HQ First Air Force will further coordinate with the FAA the final detailed description that will be included in the "Communications Services Manual."

5. Every attempt will be made to have communications initially installed in their final approved standard configuration. However, nonstandard installations may be made when mutually agreed to by FAA Washington and HQ First Air Force, pending the acquisition of necessary equipment to permit a standard installation.

#### AUTHORIZED CIRCUITS

1. *Scramble (SC)*—Point-to-point circuits used for transmission of scramble notification from a Region Operations Control Center (ROCC) to a Fighter In-

interceptor Squadron (FIS), the control tower, the terminal area controlling facility, and the appropriate ARTCC. These circuits terminate in the ARTCC and the terminal area control facility with a selective feature at the FIS operations dispatch center (ODC) to preclude the transmission of other than pertinent information to these facilities.

2. *Aircraft Movement Information Service (AMIS)*—Point-to-point Teletype circuits used for the transmission of air movement (flight plan) data from the ARTCC to a ROCC or other designated facility.

3. *Liaison (LN)*—Point-to-point circuits having two-way dial capability used to pass airspace, flight plan, interceptor recovery coordination, and AMIS voice revisions between ROCC's and the ARTCC's.

4. *Voice Page Hotlines (VPHL)*—Point-to-point communications terminating in monitor speakers at both ROCC's and ARTCC's so that direct access is available without the need for dial-up operations.

## ORDERING PROCESS

1. A Request for Service (RFS) is used for ordering circuits or changes affecting individual circuits. RFSs are submitted via computer-formatted electrical messages.

2. RFSs for types of services that have been previously approved (see **AUTHORIZED CIRCUITS** above) and are included in the "Communications Services Manual" can be processed by the air division without higher level approval. New categories of communications or services that may be of a controversial nature will be referred to HQ 1AF/SI and the NORAD ADLO for approval prior to RFS preparation.

3. At the outset of RFS preparation, First Air Force air division Information Systems personnel shall coordinate with the concerned FAA ADLO who shall review the requirement and circuit specifications. The ADLO shall coordinate the requirement with the appropriate ATC facility and request an FAA project number from the FAA region. The assignment of the project number will formally indicate FAA region concurrence. The FAA project number shall be included in the statement of work (Block 401) of the Telecommunications Service Request (TSR).

4. The air division ordering personnel shall insure that the FAA ADLO and the affected FAA region/FAA facility are included as information addressees on the RFS message and receive copies. The air divisions will address the RFS to HQ 1AF/SI for action. Upon validation, HQ First Air Force will coordinate with HQ TAC/SIPC who will in turn transmit the validated RFS message to HQ AFCC for

completion of the ordering process. This validated RFS message shall be addressed to all agencies who received the original RFS message. Receipt of the message from HQ TAC forwarding the RFS to HQ AFCC will constitute formal notification to USAF and FAA field activities that HQ First Air Force has approved and validated the requested service. As standard practice, all further correspondence relating to the RFS will be distributed to all addressees on the original air division-generated RFS.

5. In the event HQ First Air Force disapproves a request for service, HQ First Air Force will notify the appropriate ADLO, FAA region/FAA facility via electrical message. This action will permit the release of the FAA project number.

6. Occasionally, air divisions may issue a "Commercial Communications Work Order" (CCWO) which may impact the FAA. Under these circumstances, final approval at the air division-FAA region level is considered sufficient. Air division commercial communications personnel shall provide the ADLO with two completed copies of the CCWO, one of which will be forwarded to the FAA region to permit initiation of an appropriate companion order if required.

7. Under normal circumstances, the FAA shall be responsible for terminating authorized circuits in FAA equipment at FAA locations. Where sufficient terminal equipment already exists, this termination will be at no cost to First Air Force. However, if additional terminal equipment is needed at an FAA facility to meet a First Air Force requirement, the FAA, at its option, may require First Air Force to fund for the equipment.

8. First Air Force shall be responsible for the installation of AMIS teletypewriters and associated equipment. The FAA shall be responsible only for providing a suitable location when agreement is reached for the installation for such equipment. The initial installation of a teletypewriter shall be coordinated by the air division with the appropriate FAA region through the ADLO. A letter or a drawing shall be provided by the FAA region to the air division through the ADLO, designating the desired location of the aforementioned equipment. This information shall be forwarded to HQ First Air Force by the air division and shall be included in the RFS by reference.

First Air Force

(s) BUFORD D. LARY

Major General, USAF  
Commander

Federal Aviation Administration

(s) WALTER S. LUFFSEY

Associate Administrator  
for Air Traffic

## Appendix 15.

# MEMORANDUM OF UNDERSTANDING—ATLANTIC MINIMUM COMMUNICATIONS CROSSINGS

## SUBJECT

This memorandum of Understanding establishes procedures to be used in the control and coordination of United States Military Airlift Command (MAC) aircraft conducting Atlantic Minimum Communications (MINCOMM) crossings. This includes MAC assigned assets, Civil Reserve Air Fleet (CRAF), and Strategic Air Command (SAC) Tanker support for MAC refuelings.

## 1. PURPOSE

This Memorandum of Understanding establishes procedures to be followed by signatory countries in the control and coordination of United States Military Airlift Command (MAC) aircraft conducting MINCOMM crossings of the Atlantic to Europe at times during which normal ICAO procedures apply.

## 2. SCOPE

This Memorandum of Understanding is applicable to all signatory agencies.

## 3. RESPONSIBILITIES

Specific responsibilities for air traffic control procedural applications are contained in the appropriate annex.

## 4. REVISION PROCEDURES

Each annex to this Memorandum may be revised individually without requiring revision to the entire Memorandum of Understanding. The revised annex need only be coordinated and agreed to by the agencies involved. The revision date shall be the effective date of the procedure. This Memorandum of Understanding shall be reviewed annually for content or when required for procedural changes.

## 5. OBJECTIVE

Establish procedures to move MAC managed aircraft discreetly from departure bases in the United States to European destinations by minimizing dissemination of flight data.

## 6. CONCEPT OF OPERATIONS

Special procedures and routings apply from departure to destination. Area unique procedures are delineated in the appropriate Annex.

a. Safety—Safety must remain foremost throughout the execution of MINCOMM procedures. Flight safety will not be compromised to accomplish airlift objectives. MINCOMM will be terminated anytime unsafe or emergency situations exist, or when directed by air traffic control.

b. Separation—En route spacing is based on constant airspeeds and minimum time intervals. Crews will operate under the concept of military assumes responsibility for separation of aircraft (MARSA) when established on ALTRV. Minimum aircraft/formation separation is 30 minutes. Aircraft commanders will ensure separation is maintained by flying a constant .74 Mach. Aircrews will not make position reports or other radio transmissions unless required by en route/operational constraints, diversions, emergency conditions or instructed by air traffic control.

c. Emergencies—Should an emergency arise, the aircraft commander will immediately terminate the MINCOMM procedures and break radio silence, declare the emergency, and advise the appropriate air traffic control facility of intentions. They will also contact the appropriate Airlift Control Center to advise and coordinate a course of action. In the event of an in-flight contingency, the special procedures (guidance) contained in NAT SUPPS DOC.7030 will be followed. (See FLIP AP/2, Chapter 5, Section A, Additional Information.)

d. Diversions—If aircraft must divert, for any reason, radio silence shall be terminated and the Airlift Control Center or Operations Center and appropriate ATC facility will be contacted to coordinate a course of action.

e. Lost Communications—Pilots experiencing radio failure will comply with standard ICAO lost communications procedures.

f. Search and rescue—The 21 AF Operations Center will flight follow MAC aircraft and assume responsibility for search and rescue (SAR) alert notification when aircraft are not under ATC radar control.

g. Weather Monitoring—Current weather observations will be available by monitoring MAC

VOLMET broadcasts. Normal meteorological elements of wind, visibility, weather, clouds, temperature, and pressure information are included in these observations.

## 7. APPROVAL

Activation of preplanned routes will be accomplished by mission planners submitting an altitude reservation (ALTRV) approval request (APREQ) in accordance with FAAH 7610.4, Special Military Operations, to the United States Central Altitude Reservation Facility (CARF), the European Central Altitude Reservation Facility (EUCARF) and the Canadian Airspace Reservation Unit (ARU). A minimum of 5 days advance notification for activation is required, unless a real world situation necessitates less notice and the Department of Defense confirms a higher priority requirement. Mission approval/disapproval will be provided to CARF, EUCARF, or ARU by nations concerned not later than 48 hours prior to start of exercise. Usable Flight Levels will be covered in the appropriate annex. MAC Numbered Air Forces are responsible for publishing crew briefing materials when MINCOMM procedures are activated.

## 8. GENERAL PROCEDURES

a. Flight Plans—ICAO flight plans will not be filed for aircraft conducting MINCOMM crossings, with the exception of aircraft which will fly in Belgium airspace. Belgium is not a signatory to the MOU, and aircraft must terminate MINCOMM procedures prior to entering Belgium airspace. This requires pre-filed flight plans (DD Form 1801) to be activated while en route. Controllers are requested not to ask routing to reveal aircraft destinations. Controllers are requested to not answer queries from other military or civil aircrews concerning MINCOMM aircraft.

b. Hand Off Procedures—Controllers will initiate handoffs by instructing aircrews to change frequencies. Pilots will acknowledge frequency changes by first changing to the assigned frequency and then squawk "Ident". This indicates the pilot received the transmission and also alerts the next ATC facility. Should controllers require a read back or verbal acknowledgement from the pilot, the controllers will state "ACKNOWLEDGE" at the end of the transmission.

c. Position Reports—Position reports will be by exception. As long as the estimated time of arrival (ETA) at each reporting point is within plus or minus 15 minutes of the scheduled takeoff time plus the flight planned en route flying time to that point, no report will be necessary. (Scheduled takeoff time

is defined as the takeoff time published in the MAC OPORD as amended by the MAC Numbered Air Force Supplement to the OPORD.) If an aircrew discovers that an ETA for any compulsory reporting point will be more than 15 minutes different than the planned ETA, the aircraft commander will break radio silence and advise ATC of the new ETA and resume MINCOMM procedures when the new ETA is acknowledged. The air traffic control agency receiving updated ETA will correct and pass the new ETA to adjacent facilities.

d. Transponder Codes—Specific code assignments will be addressed in the appropriate annexes.

e. Aircraft Aborts or Delays—Aircraft aborts or delays will be passed to CARF/EUCARF/ARU (for Goose departures) by 21 AF Operations Center as soon as possible. CARF/EUCARF/ARU will notify affected ATC agencies.

f. Call signs—Aircraft call signs for MINCOMM missions will be "MAC (mission alfa code) XX". These call signs will be prepared by mission planners prior to requesting altitude reservations. A flow plan will be prepared and distributed to ATC facilities a minimum of 5 days before first ETD. This listing will reflect mission numbers and call signs; i.e., Mission: A023RF, Call Sign: MAC R10. (Note: digits cannot be 8 or 9). ETDS will be provided in the Flow Plan.

g. Terminations Points—MINCOMM silent procedures will terminate at defined points outlined in the appropriate annex.

## 9. ROUTES

MINCOMM routes are listed below and shall be on file at CARF, EUCARF, ARU, and affected air traffic control facilities prior to implementation of MINCOMM procedures. Each route is assigned an identification number to facilitate and streamline coordination of MINCOMM missions; i.e., MINCOMM1. Mission names will be assigned for exercise MINCOMM crossings; i.e., REFORGER.

## 10. UNITED STATES/CANADIAN ROUTES

The routes listed below are to be used when conducting MINCOMM crossings in the United States and Canada to join Atlantic MINCOMM crossing routes at Nantucket or Goose.

a. Routes to NANTUCKET (ACK) to join Oceanic routes:

(1) MINCOMM 1: BAE . J68 . FNT . J106 . J70 . JHW . HNK . J68 . ACK

(2) MINCOMM 2: MEM . J42 . RBV . J62 . ACK

(3) MINCOMM 3: IRQ . J53 . SPA . SPA100R . J209 . ORF . J174 . J62 . ACK

b. Routes to Goose (YYR) to join Canadian/Oceanic routes:

(1) MINCOMM 4: BAM . J32 . MLD . BOY . CZI . DPR . ABR . DLH . 4800N 9000W . HL533 . YQT . YMO . YWK . YYR

(2) MINCOMM 5: LIT . J131 . PXV . J29 . ROD . DJB . BUF . ART . MSS . 4500N 7430W . YQB . HL560 . YYR

(3) MINCOMM 6: IRQ . J53 . SPA . SPA100R . J209 . RDU . J207 . FKN . J79 . JFK . J225 . PUT . ENE . PQI . J564 . YYR

## 11. OCEANIC ROUTES

The routes listed below are to be used when conducting MINCOMM crossings of the Atlantic.

NOTE.—Aircrews shall be thoroughly familiar with FLIP AP/2, Chapter Five, North Atlantic (NAT) region procedures.

a. Southern route to Europe from Nantucket to Europe via Lajes:

(1) Nantucket to Lajes: MINCOMM 7—ACK . JOBOC . 41N 060W . 41N 050W . MIKE . FLO . GRA . GP

(2) Lajes to Europe: MINCOMM SOUTH—LAJES ONE DEPT . ALPHA RADAR ALPHA . 44N 020W . 45N01820W . 50N 008W . LND . TR1 . WD4

b. Northern route to Europe: Flight Level 290 MINNCOMM NORTH—LOACH . 57N 050W . 59N 040W . 59N 030W . 59N 020W . 59N 010W . QN9

(s) JAMES D. KELLIM, Major General, USAF  
Deputy Chief of Staff Operations  
Headquarters Military Airlift Command

(s) J. M. L. BOURGEOIS, Major General (CF)  
Director, NORAD Combat Operations Staff  
Headquarters North American Aerospace Defense Command

(s) ROBERT L. PAUL, Colonel, USAF  
Assistant Director, Special Operations  
Directorate of Operations  
Headquarters United States Air Force

(s) DAVID J. HURLEY  
Federal Aviation Administration  
Manager, Air Traffic Operations Division

## Appendix 16.

### FEDERAL AVIATION ADMINISTRATION AUTHORIZATION FOR INTERCEPTOR OPERATIONS (FAA AFIO)

EFFECTIVE: October 1, 1986.

#### I. AUTHORIZATION

Authority is granted for Commander in Chief, NORAD (CINCNORAD), to operate interceptors subject to the conditions and in compliance with the responsibilities and standard operating procedures set forth herein.

The Director, Air Traffic Operations Service (ATO-1), shall modify, revise, or cancel in part or in whole this Authorization as necessary to meet changing requirements. In addition, he shall take appropriate action to modify, revise, or cancel this Authorization at any Air Defense Control Facility (ADCF) upon determination that immediate action is necessary to alleviate an unsafe condition. Notification of suspension of this Authorization shall be made by the Federal Aviation Administration, Manager, Operations Division, ATO-100, to the Commander, CONUS Region, and the Commander, Alaskan Region, concerned or higher authority. Close coordination will be accomplished with NORAD to ensure that full consideration is given to national defense requirements and the effect that modifications, revisions, or cancellations of the Authorization may have on these requirements.

In recognition of its statutory responsibility, the FAA requires that ATO personnel (ADLO's) be provided access as necessary to those ADCF's operating under the scope of this authority to assist the Director, ATO-1, in determining the adequacy of responsibilities and procedures set forth herein.

#### II. CONDITIONS

The following conditions are prerequisite to the exercise of authority granted under this document.

A. When it is determined by competent military authority that operations within the ATC system would significantly derogate the mission, this authority may be used for the movement of interceptors under NORAD operational jurisdiction while on an active air defense mission. This authority may also be used for the movement of tanker aircraft used in the support of an active air defense mission under the jurisdiction of the Alaskan Air Command.

B. NORAD shall provide an equivalent level of safety to that required by the FAA in exercising ATC responsibility.

C. This authority shall only be exercised by those Air Defense Control Facilities (ADCF's) which:

1. Have been made known to the Director, ATO, (see Supplement 1) and personnel of such facilities have:

a. Been properly examined by competent FAA authority on:

(1) The provisions herein and appropriate letters of agreement.

(2) Additional regulations and procedures necessary for their application.

b. Satisfactorily demonstrated their skill in application of the requirements in C1a(1) and (2) above.

D. Operation of interceptors shall be in accordance with Instrument Flight Rules (IFR) and all other applicable Federal Aviation Regulations (FAR) unless otherwise authorized by the FAA.

E. Operation of interceptors contrary to the provisions of FAR 91.121(b) is authorized provided that such operations shall be conducted only to the extent necessary to accomplish the intercept mission.

F. Instructions issued by the ADCF are mandatory upon interceptor pilots operating under this authority.

G. NORAD shall ensure that the appropriate aircrew and ground crew personnel have full knowledge of their responsibilities.

H. Procedures governing the use of tanker aircraft under this authority shall be contained in a letter of agreement between the Anchorage ARTCC and the Alaskan Air Command.

#### III. RESPONSIBILITIES AND PROCEDURES

A. The ADCF shall:

1. Advise the ATC facility/ies in whose area the interceptor will operate and the pilot/s whenever interceptor aircraft are to be operated under the provisions of this authorization.

2. Establish two-way radio communications and radar identification of interceptors, and maintain such radio communications and radar identification,



regardless of weather conditions or geographical area until jurisdiction is transferred to ATC.

3. Take the following action in event radio and/or radar contact is lost with aircraft being controlled by an ADCF:

a. Radar contact lost, never established, or not considered adequate.

(1) Advise pilot/s:

(a) Radar contact lost and to remain in VMC conditions if possible. If not possible to maintain VMC, maintain last assigned altitude.

(b) Contact the appropriate ATC facility immediately.

(2) Immediately notify the appropriate ATC facility of the following:

(a) Call sign, type, and number of aircraft.

(b) Last known position and assigned altitude/s.

(c) Assigned heading.

(d) Assigned transponder code.

(e) Flight conditions if known.

b. Radio contact lost. Immediately notify the appropriate ATC facility of the following:

(1) Call sign, type, and number of aircraft.

(2) Position and assigned altitude/s.

(3) Assigned heading.

(4) Assigned transponder code.

(5) Flight conditions if known.

(6) Estimated time of arrival at recovery radio facility or approach fix.

4. Provide separation between interceptors and all other aircraft except as set forth in c. below as follows:

a. Between aircraft which are within the SOCC system, the minimum shall be TEN NAUTICAL MILES; or

b. At least 1,000 feet vertical separation up to and including flight level (FL) 290 and at least 2,000 feet vertical separation above FL 290.

c. When military authority assumes responsibility for separation using lesser minima, the minima specified in a and b above need not be applied:

(1) Between interceptors, or

(2) Between interceptor and target aircraft when positive target verification has been made.

5. Keep informed of current weather conditions applicable to the operational areas and recovery bases.

6. Advise interceptor pilots and ATC facilities of the alternate airport of recovery to be used when weather conditions may preclude landing at the intended base of recovery.

7. Notify the appropriate air traffic control facility as specified in a letter of agreement immediately when a scramble is ordered and accomplish the following actions:

a. Active air defense missions shall be so identified.

b. A flight plan containing the following information shall be filed:

(1) Call sign/s.

(2) Number of aircraft.

(3) Departure route requested.

(4) Duration of flight.

(5) Other information as may be required by the ATC facility.

c. Terminal facilities, both FAA and military, receiving flight plans from an ADCF shall ensure the necessary information is relayed to other affected terminal facilities and to the ARTCC if ARTCC procedures are involved.

8. Upon completion of intercept and aircraft identification portion of the mission, the ADCF will initiate action to transfer control to the appropriate FAA facility for return to base. Recovery coordination will be as specified in letters of agreement.

B. The flight commander and/or interceptor pilot shall:

1. Obtain an appropriate air traffic clearance prior to departure.

2. Adhere to the scramble procedures as contained in the appropriate letter of agreement unless otherwise cleared by ATC.

3. Adhere to all control instructions issued by the ADCF.

4. Provide separation from the target aircraft during visual or airborne interceptor radar contact with the target being intercepted.

5. Advise the ADCF prior to encountering and after leaving IMC weather conditions.

6. Effect immediate radio contact with the appropriate ATC facility when radio contact has been lost with the ADCF. If unable, follow two-way radio communication failure procedures.

C. The air traffic control facility shall:

1. Effect expeditious handling, granting priority to interceptors engaged in an active air defense mission and identified as such by the ADCF, on the basis that control of conflicting traffic shall be predicated on releasing the interceptor immediately upon request with consideration for safety of flight.

2. When a delay is anticipated, issue EFC times to interceptors.

**IV. CANCELLATION**

1, 1986.

The Federal Aviation Administration Authorization  
For Interceptor Operations (FAA AFIO), dated Janu-

(s) John R. Ryan

JOHN R. RYAN  
Director, Air Traffic Service

**SUPPLEMENT 1**

Air Defense Control Facilities authorized to control  
interceptors in accordance with provisions of the  
FAA AFIO:

1. Southeast Sector Operations Control Center  
(SOCC), Tyndall AFB, FL.
2. Northeast Sector Operations Control Center  
(SOCC), Griffiss AFB, NY.

3. Northwest Sector Operations Control Center  
(SOCC), McChord AFB, WA.

4. Southwest Sector Operations Control Center  
(SOCC), March AFB, CA.

5. Alaskan Region Operations Control Center  
(ROCC), Elmendorf AFB, AK.

## Appendix 17.

# DOT/FAA/FEDERAL COMMUNICATIONS COMMISSION (FCC) SCATANA PLAN

### SECTION I. EXPLANATION OF TERMS

For the purpose of this plan and supporting documents, the following explanations apply:

1. *Air Defense Emergency.* An emergency condition which exists when attack upon the continental United States, Alaska, Canada, or US installations in Greenland by hostile aircraft or missiles is considered probable, imminent, or taking place.

2. *Air Defense Identification Zone.* The area of airspace over land or water, extending upward from the surface, within which the ready identification, location, and control of aircraft is required in the interest of national security.

3. *Air Navigation Aids (NAVAID's).*

a. Federal NAVAID's. Radio beacons, VOR/DME, VORTAC, TACAN, and ILS/MLS stations owned and operated by an agency of the Federal Government, such as the FAA, Military Services, and United States Coast Guard.

b. Non-Federal NAVAID's. VOR/DME, LF/MF radio beacons, and ILS/MLS stations licensed by the FCC.

4. *Appropriate Military Authorities.* Within the NORAD area of responsibility, CINCNORAD and NORAD Region Commanders. NORAD Region Commanders may delegate military authority to sector commanders as appropriate. Outside the NORAD area of responsibility, the Commander in Chief, or his designated representative, of the unified or specified command exercising operational control over the area.

5. *Defense Area.* Airspace of the United States other than airspace designated as an Air Defense Identification Zone within which the ready control of aircraft is required in the interest of national security during an Air Defense Emergency or Defense Emergency.

6. *Defense Emergency.* An emergency condition which exists when:

a. A major attack is made upon U.S. forces overseas, or allied forces in any area, and confirmed either by the commander of a unified or specified command or higher authority.

b. An attack of any type made upon the United States and is confirmed either by the commander of a command established by the Secretary of Defense or higher authority.

7. *Dispersal.* Relocation of aircraft to different operating bases for the purpose of increasing survivability.

8. *Diversion.* The intentional change of a flight from its intended destination for operational or tactical reasons.

9. *Emergency Security Control of Air Traffic (ESCAT) Rules.* Emergency rules for the security control of air traffic prior to the declaration of Air Defense Emergency (see Section III).

10. *FAA Region.* A geographical subdivision of the FAA area of responsibility.

11. *Implement SCATANA.* The phrase used to direct FAA to commence those actions required in the SCATANA Plan (see Section IV).

12. *Nontactical Air Traffic.* Civil or military flights other than tactical air traffic (see #20).

13. *North American Aerospace Defense Command (NORAD).* A binational integrated Canadian and United States Command responsible for the surveillance and control of the airspace of Canada and the United States, for taking appropriate responses against air attacks, and for providing warning and assessment of aerospace attack on North America.

14. *NORAD Region.* A geographical subdivision of the NORAD area of responsibility.

15. *NORAD Sector.* A geographical subdivision of the NORAD region for which NORAD is responsible.

16. *Rerouting.* The intended deviation of a flight from its original course without changing its destination.

17. *SARDA.* State and Regional Disaster Airlift. A plan for the use of non-air carrier aircraft during a national emergency.

18. *SCATANA.* The short title for the joint DOD/ DOT/FCC Plan for the Security Control of Air Traffic and Air Navigation Aids.

19. *Security Control Authorization.* Military authorization for an aircraft to takeoff when Emergency Security Control of Air Traffic (ESCAT) is applied or SCATANA has been implemented (see Sections III and IV).

20. *Tactical Air Traffic.* Military flights engaged in an operational mission against the enemy, flights engaged in immediate deployment for a combat mis-

sion, and preplanned combat and logistical support flights contained in Emergency War Plans.

**21. United States.** The several states, the District of Columbia, the Commonwealth of Puerto Rico, and the several territories and possessions of the United States (including areas of air, land, or water administered by the United States under international agreement) including the territorial waters and the overlying airspace thereof.

**22. Wartime Air Traffic Priority List (WATPL).** The list contains eight priorities designed to control the volume of air traffic when SCATANA has been implemented (see Section V).

**23. Use of the Words Will and Shall.** For the purposes of this plan, the words "will" and "shall" denote mandatory compliance by the affected persons or agency(ies).

**24. List of Acronyms and Abbreviations:**

ADIZ	Air Defense Identification Zone
ADLO	Air Defense Liaison Officer
AMA	Appropriate Military Authority
ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
ATCCC	Air Traffic Control Command Center
CINCNOAD	Commander in Chief, North American Aerospace Defense Command
CARDA	Continental Airborne Reconnaissance for Damage Assessment
CRAF	Civil Reserve Air Fleet
DME	Distance Measuring Equipment
DOD	Department of Defense
DVFR	Defense Visual Flight Rules
ESCAT	Emergency Security Control of Air Traffic
EWO	Emergency War Orders
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
JCS	Joint Chiefs of Staff
LF	Low Frequency
MF	Medium Frequency
MLS	Microwave Landing System
NAVAID	Navigation Aid
NDB	Nondirectional Beacon
NORAD	North American Aerospace Defense Command
ROCC	Region Operations Control Center
SCA	Security Control Authorizations
SAC	Strategic Air Command
SARDA	State and Regional Disaster Airlift
SCATANA	Security Control of Air Traffic and Air Navigation Aids
SIF	Selective Identification Feature (Transponder)
SOCC	Sector Operations Control Center
TACAN	Tactical Air Navigation
VFR	Visual Flight Rules
VHF	Very High Frequency
VOR	VHF Omnidirectional
VORTAC	VHF Omnidirectional/Tactical Air Navigation
WASP	War Air Service Program

**WATPL**

**Wartime Air Traffic Priority List**

**SECTION II. GENERAL PROVISION OF THE PLAN**

**A. PURPOSE AND SCOPE**

1. Periods of various emergency conditions demand security control of both civil and military air traffic and NAVAIDs. This control will enhance the maximum use of airspace for defense and defense-supported activities and civil aircraft consistent with air safety.

2. Selective and systematic control/shutdown of air navigation aids will be effected appropriate to the extent of the emergency conditions existing or expected to exist. These constraints will be placed on air traffic and air traffic facilities as determined by NORAD for the area of NORAD responsibility or by the commander of the unified/specified command having operational control over the area involved. This plan applies to all United States territory over which the FAA has air traffic jurisdiction by international agreement.

3. This plan covers two distinct levels of restraints.

a. Emergency Security Control of Air Traffic (ESCAT) can be imposed for an emergency situation that does not meet the criteria for the declaration of a Defense Emergency or Air Defense Emergency.

b. Security Control of Air Traffic and Air Navigation Aids (SCATANA) for use normally after the declaration of a Defense or Air Defense Emergency.

4. This plan establishes responsibilities, procedures, and instructions for application of both ESCAT and SCATANA as an emergency preparedness course of action.

**B. AMPLIFYING INFORMATION**

1. Interference with normal air traffic will be minimized consistent with the requirement for operation of the air defense system.

2. Appropriate unified/specified commands, in conjunction with the FAA Air Traffic managers, will prepare annexes and agreements supplementing this plan for their area of responsibility. These supplements are to consider the special requirements of organized civil defense and disaster relief flights, agricultural and forest fire flights, border patrol flights, and other essential civil air operations to the end that maximum use of these flights, consistent with air defense requirements, will be made when ESCAT and SCATANA are in effect.

3. Military air operations vital to national defense; e.g., SAC and TAC flights, civil U.S. and foreign flag civil air carrier flights under mission control of the military, and flights of foreign flag carriers oper-

ating in the "common defense," are to be given priority over all other military and civil aircraft through procedural handling by the Air Traffic Control (ATC) system as specified in coordinated agreements or authorizations for particular operations (see Section VI).

4. Appropriate military authorities will direct the extent of security control of air traffic and air navigation aids as required by the military situation. Such directions will be issued to the FAA Air Traffic Control Command Center for implementation by appropriate FAA ARTCCs. The area of responsibility of the appropriate military authority may not agree with ARTCC boundaries, especially in the NORAD area where one ARTCC's boundary may lie within two or more NORAD Regions/Sectors. To prevent confusion, agreements will be developed between appropriate military authorities and the ARTCCs concerned to insure that each ARTCC receives direction from one military authority only. Unless operational requirements dictate otherwise, directed SCATANA actions will be consistent throughout an individual ARTCC area.

5. To insure implementing actions can be taken quickly, SCATANA testing will be conducted periodically in accordance with Section VII of this plan.

6. Prior to or subsequent to the declaration of a Defense Emergency or an Air Defense Emergency, there may be a requirement to disperse military aircraft for their protection. If such dispersal plans are implemented when any part of this plan has been placed in effect, operations will be in accordance with the requirements of that portion of the SCATANA Plan which is in effect. If any part of the SCATANA Plan is ordered while dispersal is in progress, dispersal operations will be revised as required to comply with SCATANA.

7. Direct communications are authorized between appropriate agencies and units for the purpose of coordinating and implementing the procedures in this plan.

8. All concerned agencies will review this plan for adequacy and currency. HQ NORAD, acting as executive agency for DOD, will process and distribute administrative and organizational changes as they occur; however, this plan will be reviewed at least once every 2 years by FAA acting for DOT, FCC, and unified/specified commanders and reissued or changed as required. Recommended changes should be forwarded to:

Headquarters

North American Aerospace Defense Command  
NCOO/Stop 7

Peterson Air Force Base, CO 80914-5001

## C. AUTHORITY

1. Joint Strategic Capabilities Plan (JSCP).
2. Federal Aviation Act of 1958, as amended.
3. Communications Act of 1934, as amended.
4. Executive Order 11490.
5. The National Security Act of 1947, as amended.

## D. RESPONSIBILITIES

### 1. CINCNORAD will:

a. Establish the military requirements for ESCAT and SCATANA.

b. Coordinate with the Commanders of Unified and Specified Commands, the OJCS, the DOD Advisory Committee on Federal Aviation, the Administrator, FAA, and the Defense Commissioner, FCC, as appropriate, regarding the establishment of procedures for implementation.

### 2. The Administrator, FAA will:

a. Establish the necessary FAA directives/plans including special ATC procedures to implement this plan.

b. Coordinate with appropriate military authorities prior to the establishment of procedures for this plan.

c. Maintain liaison with appropriate NORAD Region/Sector commanders through appropriate FAA offices.

d. Administer this plan in accordance with requirements established by the Commander in Chief, North American Aerospace Defense Command.

e. Cooperate with the FCC in establishing procedures for control of non-Federal NAVAIDs as defined in this plan.

f. Insure that authorized FAA ADLO positions at operational units are adequately staffed.

g. Publish a common-use document describing SCATANA and its purpose for use by civil aviation.

### 3. Federal Communications Commission will:

a. Engage in rulemaking or other actions, as appropriate, in support of this plan.

b. Cooperate with the FAA in establishing procedures for control of non-Federal NAVAIDs as defined in this plan.

### 4. Appropriate Military Authorities will:

a. Direct the control of NAVAIDs (VOR/DME, VORTAC, TACAN, NDB, ILS, and MLS) within their cognizance as required.

b. Issue security control instructions to the appropriate FAA regions, ARTCCs, and the Air Traffic Control Command Center, as necessary, to insure performance of their air defense mission.

c. Maintain liaison with appropriate FAA regional Air Traffic managers and with the FCC.

d. Conduct tests of this plan in coordination with the FAA and FCC.

e. Cooperate with the FAA regional Air Traffic managers and with the FCC in making supplemental agreements to this plan.

5. The FAA regional Air Traffic managers will:

a. Assure FAA participation with the NORAD Region/Sector commanders in the testing of this plan.

b. Insure dissemination of information and instructions concerning this plan within their areas of responsibility to civil and military aeronautical facilities and civil pilots.

c. Place in effect procedures outlined in this plan in accordance with requirements established by appropriate military authorities.

d. Assist appropriate military authorities in making supplemental agreements to this plan as may be required.

e. Insure each ARTCC has a plan for expeditiously diverting or landing all aircraft according to the SCATANA priorities imposed upon implementation of SCATANA. The plans should also address the expeditious control of NAVAIDS. Insure a review and verification of the diversion plan is accomplished each calendar year.

f. Coordinate with the appropriate military authority to establish a listing of aeronautical facilities (Federal and non-Federal) by ARTCC and NAVAIDS controlled by each facility.

6. Commanders of Unified and Specified Commands will:

a. Insure that North American air traffic movement sections of the Emergency War Plans are coordinated with appropriate NORAD and FAA authorities.

b. Identify specific NAVAIDS (VOR/DME, ILS, MLS, NDB, VORTAC, TACAN) which are essential to support contingency operations of assigned forces during implementation of SCATANA. The appropriate military authority will, except under actual emergency air defense situations, insure that such air NAVAIDS within their area of responsibility remain in operation. If actual emergency air defense situations require shutdown of these air NAVAIDS, the appropriate military authority will immediately notify the respective commanders of unified and specified commands of the shutdown.

### SECTION III. PROCEDURES FOR APPLICATION OF EMERGENCY SECURITY CONTROL OF AIR TRAFFIC (ESCAT)

#### A. SITUATION

Emergency conditions which threaten national security but do not warrant the declaration of Defense Emergency, Air Defense Emergency, or the control of air NAVAID's.

#### B. INTENTION

To provide for the most effective use of airspace for defense and defense-supported activities in the affected area by:

1. Insuring that the position of all friendly air traffic is known and can be contacted by radio if necessary.

2. Controlling and limiting the density of air traffic operating in airspace critical to the conduct of air defense operations.

#### C. APPLICATION

1. The appropriate military authority will take the following actions:

a. Direct the Air Traffic Control Command Center (ATCCC) to apply ESCAT. In the event ATCCC cannot be reached or is unable to comply, ESCAT instructions should be passed directly to the affected ARTCC.

b. Specifically define the affected area.

c. Define the types of restrictions to be placed in effect. These may require the diverting and rerouting of traffic, the restricting of traffic to certain areas or corridors, and the initiating of a requirement to obtain a Security Control Authorization prior to takeoff.

d. Within NORAD, the region commander will advise CINCNORAD, who will then advise the Administrator, FAA, and the Defense Commissioner, FCC, that ESCAT has been applied. Outside NORAD, the appropriate military authority will advise the Administrator, FAA, and the Defense Commissioner, FCC, directly. When time is vital, notification may occur after ESCAT has been applied.

e. Direct the Air Traffic Control Command Center to ease or terminate restrictions as the tactical situation allows.

2. ARTCC's will take the following actions when directed to apply ESCAT:

a. Disseminate ESCAT instructions and restrictions received to air traffic, civil and military air traffic control facilities, flight service stations, and other appropriate aeronautical facilities.

b. Impose the restrictions on air traffic as directed by the appropriate military authority. Restriction

tions will apply to those NORAD Regions/Sectors which have implemented ESCAT. The restrictions will automatically include instructions for all VFR traffic within the affected area to land at the nearest suitable airport and file an IFR/DVFR flight plan.

3. Civil and military air traffic control facilities and other aeronautical facilities will disseminate to air traffic and aircraft operators and will implement those instructions and restrictions received from the ARTCC's. When an IFR or DVFR flight plan has been filed, it will be examined by the appropriate aeronautical facility to insure that it conforms with the ESCAT restrictions placed in effect by the appropriate military authority. When a flight plan does conform with the ESCAT restrictions, the appropriate aeronautical facility will grant a Security Control Authorization and the flight can then be given takeoff clearance. When a flight plan does not conform with the ESCAT restrictions, a Security Control Authorization will not be given and takeoff clearance will be denied.

4. The pilot in command will take the following actions when ESCAT is applied.

a. If airborne, comply with the instructions issued by the appropriate aeronautical facility.

b. If not airborne, file an IFR or DVFR flight plan prior to takeoff and comply with the instructions issued by the appropriate aeronautical facility.

c. Aircraft which are not radio equipped may not file an IFR or DVFR flight plan and will not be permitted to operate in areas affected by ESCAT.

#### **SECTION IV. PROCEDURES FOR IMPLEMENTATION OF SECURITY CONTROL OF AIR TRAFFIC AND AIR NAVIGATION AIDS (SCATANA)**

##### **A. SITUATION**

Three types of situations may require the implementation of SCATANA.

1. An emergency has resulted in the declaration of an Air Defense Emergency within the NORAD area. Under this condition, SCATANA will be automatically implemented.

2. A NORAD Region/Sector commander may direct implementation of SCATANA for his Region/Sector when his Region/Sector or an adjacent Region/Sector is under attack and an Air Defense Emergency has not yet been declared.

3. An emergency has resulted in the declaration of a Defense Emergency outside the NORAD area. Under this condition, SCATANA may be considered for implementation.

##### **B. INTENTION**

To provide for the most effective use of airspace for defense and defense-supported activities by aircraft of civil and military agencies by:

1. Exercising security control of civil and military aircraft entering, departing, or moving within the U.S. areas and their coastal approaches.

2. Selectively limiting air traffic consistent with air defense requirements.

3. Exercising control over the following air navigation systems: VOR/DME, VORTAC, ILS, MLS, TACAN, and NDB.

##### **C. IMPLEMENTATION**

1. The appropriate military authority will take the following actions:

a. Direct the Air Traffic Control Command Center to implement SCATANA. In the event ATCCC cannot be reached or is unable to comply, SCATANA instructions should be passed directly to the affected ARTCC.

b. Specify what restrictions are to be implemented, such as:

(1) Routing restrictions on flights entering or operating within appropriate portions of the defense area.

(2) Restrictions for the volume of air traffic within the defense area using the WATPL (see Section V) and Security Control Authorizations.

(3) Altitude limitations on flight operations in selected areas.

(4) Special instructions concerning the control of navigation aids used for friendly aircraft operations. This includes continued operations, as long as the actual air defense situation permits, of those air NAVAID's essential to support other unified and specified command contingency operations.

(5) Confirmation or modification of previous instructions which may have been implemented with the application of ESCAT.

c. Revise or remove restrictions to the movement of air traffic and control of air navigation aids as the tactical situation permits.

2. ARTCC's will take the following actions when directed to implement SCATANA:

a. Disseminate SCATANA implementation instructions to civil and military air traffic control facilities and other appropriate air traffic services facilities.

b. Impose the restrictions on air traffic as directed by the appropriate military authority. Restrictions will apply to those NORAD Regions/Sectors which have implemented SCATANA. The restrictions will automatically include instructions for all VFR traffic within the affected area to land at the

nearest suitable airport and file an IFR or DVFR flight plan. Landing, diversion, or dispersal of traffic, when ordered, will be to airports outside metropolitan areas or likely target complexes whenever possible. Instructions will be passed over normal air/ground/air radio frequencies.

c. As directed by the appropriate military authority, implement the control of VOR/DME, ILS, MLS, VORTAC, NDB, and TACAN as follows:

(1) Shut down navigation aids in accordance with the military/FAA supplemental agreements. This will allow time to land/disperse airborne aircraft, and shall provide for the extension of such times when the air traffic situation dictates.

(2) Direct the control of air navigational aids to make sure that required aids, as indicated in flight plans, will be available for authorized aircraft flights.

d. When directed to reduce or remove SCATANA restrictions, authorize resumption of air traffic and operation of air navigation aids as specified by the appropriate military authority.

3. Civil and military air traffic control facilities and other appropriate aeronautical facilities will:

a. Maintain the current SCATANA action form for that facility at appropriate operating positions.

b. When SCATANA is implemented or terminated, take the action indicated on the facility's SCATANA action form.

c. Maintain current information on the status of restrictions imposed on air traffic.

d. Approve or disapprove filed flight plans in accordance with current instructions received from the ARTCC's. Approval will indicate that the flight is permitted under the WATPL priority currently in effect or that the flight has been granted a Security Control Authorization.

e. Forward flight plans and approval requests to the ARTCC as required.

f. Disseminate instructions and restrictions to air traffic as directed by the ARTCC's.

4. The pilot in command will comply with security control instructions as follows:

a. IFR flights—Comply with instructions received from the appropriate aeronautical facility.

b. VFR flights—Land at the nearest suitable airport when so directed.

c. Aircraft on the ground—File an IFR or DVFR flight plan with the proper FAA facility and receive approval prior to departure.

#### **D. MOVEMENT OF TACTICAL AIR TRAFFIC**

1. Tactical air traffic assigned a WATPL number of 1 or 2 will not be delayed, diverted, or rerouted

by NORAD Region/Sector commanders. However, NORAD Region/Sector commanders may recommend that this traffic be rerouted to avoid battle or battle-threatened areas.

2. Air traffic assigned a WATPL number other than 1 or 2 may be delayed, diverted, or rerouted by the NORAD Region/Sector commander to prevent degradation of his area of the air defense system.

3. Aircraft being "recovered" will be expedited to home or alternate bases, and "search and rescue" aircraft expedited on their missions, but such aircraft may be diverted to avoid battle areas or takeoff may be delayed to prevent saturation of airspace.

4. Tactical air traffic will file IFR flight plans and comply with IFR procedures regardless of weather. The appropriate WATPL number will be entered in the Remarks section in the Aircraft Clearance Form DD 175. The WATPL number will be posted on ARTCC flight strips and passed with flight plan data from one ARTCC to the next and to the appropriate air defense control facilities.

5. For mass military operations, a single clearance form will be filed and Altitude Reservation flight plan (ALTRV) procedures will be applied.

6. Compliance with approved flight plan and position report requirements is important for identification. Aircraft aborting or deviating from an approved flight plan will airfile a revised flight plan as soon as the necessity for such deviation is evident. Unauthorized deviations may preclude identification and result in engagement by defensive weapons.

#### **E. SPECIAL OPERATIONS**

1. In areas that are not critical to air defense or in areas of poor or no radar coverage, the appropriate military authority may wish to authorize additional specific flights which may not qualify for a high enough priority under the WATPL. When SCATANA has been implemented, the appropriate military authority may authorize flights by granting a Security Control Authorization to the ARTCC or agency requesting the clearance.

2. The following flights may require the granting of a Security Control Authorization prior to takeoff:

a. Organized civil defense missions.

b. Disaster relief flights.

c. Agricultural and forest fire flights.

d. Border patrol flights.

e. SARDA and foreign flag civil carrier flights prior to WATPL Six.

### **SECTION V. WARTIME AIR TRAFFIC PRIORITY LIST (WATPL)**

#### **A. SITUATION**



When SCATANA is implemented, a system of traffic priorities is required to make sure that optimum use is made of airspace, consistent with air defense requirements. This system will be the prime means of controlling the volume of air traffic. (The Security Control Authorization will be used as a supplement to WATPL.)

## **B. INTENTION**

To establish a WATPL for the movement of air traffic when SCATANA has been implemented, and to provide policy guidance for the practical application of the system. Priorities shall take precedence in the order listed and subdivisions within priorities are equal.

## **C. WARTIME AIR TRAFFIC PRIORITY LIST**

### **1. Priority One:**

a. The President of the United States, the Prime Minister of Canada, respective cabinet or staff members essential to national security, and other members as approved or designated by the Secretary of Defense.

b. Anchor Annex Flights.

c. Aircraft engaged in active continental defense missions. This includes interceptors, antisubmarine aircraft, and airborne warning and control aircraft.

d. Retaliatory aircraft, including their direct support aircraft, executing EWO.

e. Airborne command elements which provide backup to command and control systems for the combat forces.

### **2. Priority Two:**

a. Forces being deployed or in direct support of combat operations against the enemy to include the use of activated Civil Reserve Air Fleet (CRAF) aircraft, as necessary, and/or other U.S. and foreign flag civil air carrier aircraft under mission control of the U.S. military.

b. SAC aircraft in direct and immediate support of EWO aircraft.

c. Search and rescue aircraft operating in support of these activities.

### **3. Priority Three:**

a. Forces being deployed in support of combat operations against the enemy.

b. Continental Airborne Reconnaissance for Damage Assessment (CARDA) missions for the support of immediate combat operations.

c. Search and rescue aircraft not included in Priority Two.

d. Flight inspection aircraft flights in connection with emergency restoration of airway and airport facilities in support of immediate combat operations.

### **4. Priority Four:**

a. Dispersal of tactical military aircraft.

b. Dispersal of U.S. air carrier aircraft assigned to the War Air Service Program (WASP).

c. Dispersal of U.S. civil air carrier aircraft allocated to the CRAF Program.

d. Dispersal of FAA/DOD flight inspection aircraft.

e. Dispersal of foreign civil air carrier aircraft in the U.S. in accordance with specific international agreements.

f. Flight inspection activity in connection with airway and airport facilities.

### **5. Priority Five:**

a. The air transport of military commanders, their representatives, and DOD-sponsored key civilian personnel which is of importance to national security or which will have an immediate effect upon combat operations of the Armed Forces.

b. Dispersal of nontactical military aircraft for their protection.

c. Public aircraft assigned to FAA and other Federal agencies.

### **6. Priority Six:**

a. Flight operations in accordance with approved Federal and State emergency plans; e.g., WASP and SARDA. Foreign civil air carrier flights will operate in accordance with specific international agreements.

b. Other essential CARDA missions not included in 3b above.

### **7. Priority Seven. Other military flight operations.**

8. **Priority Eight.** All other flight operations not specifically listed above.

## **D. POLICY FOR APPLICATION OF WATPL**

1. The restrictions embodied in the WATPL will apply to all aircraft except those in receipt of a Security Control Authorization.

2. Priority will be dependent on the nature of the aircraft's mission. Operational test flights will take the priority of the mission aircraft tested.

3. The originator of an aircraft movement requirement will be responsible for determining and verifying the appropriate priority in accordance with the list described above.

4. The individual filing the flight plan will be responsible for including the priority number as determined by the originator of the requirement.

5. During general war conditions, situations may occur which cannot be related to the WATPL. Aircraft emergencies and inbound international flights which have reached the point of no return, including foreign air carrier flights en route to safe-haven airports in accordance with specific international agree-

ments, are examples of such situations. These incidents must be treated individually through coordination between ATC and appropriate military agencies in consideration of the urgency of the inflight situation and existing tactical military conditions.

6. During periods other than general war, aircraft movements are handled as follows:

a. Involvement in limited war or execution of contingency plans, to include JCS-directed actions, immediately makes successful completion of such action a primary national objective. Therefore, aircraft movements in support of these actions will be afforded expeditious handling by the ATC system commensurate with the degree of urgency stated by the DOD to the FAA. When directing the execution of a contingency/limited war plan, or other JCS-directed operation which is in pursuit of primary national objectives, the DOD will so advise the FAA (or appropriate Canadian authority if Canadian airspace is involved), requesting that aircraft operating in accordance with such plans be given priority handling over air traffic except active air defense missions and launch of the strategic alert force and supporting aircraft. Should contingency, limited warfare, or other JCS-directed plans be executed concurrently by more than one operational commander, the JCS will state to the FAA (or appropriate Canadian authority when Canadian airspace is involved) and the military commanders concerned, the relative urgency of each operation and will resolve conflicts that may arise.

b. Assignment of reserved airspace to accommodate military air operations which, because of their objectives, cannot be conducted in accordance with routine ATC procedures will be based upon an order of precedence for the purpose of resolving mission conflicts in planning altitude reservations. This order of precedence is published in appropriate Joint Service Regulations and FAA documents.

7. Priorities for air traffic clearances required under the SCATANA Plan are not to be confused with civil priorities assigned to civil air carrier aircraft under the WASP priorities systems or to general aviation civil aircraft under the SARDA Plan. WASP and SARDA priorities are designed to provide for controlled use of civil aircraft capability and capacity, and they have secondary significance when the WATPL for the movement of aircraft is in effect.

## **SECTION VI. TACTICAL AIR MOVEMENT PLANS**

### **A. SITUATION**

In a situation when Emergency War Plans and other contingency plans are being implemented, the

large volume of tactical air traffic generated is likely to result in conflicting requirements for the available airspace. It is obvious that such conflicts should be minimized in order to prevent saturation of the air defense system, yet permit the orderly execution of the various contingency plans. To this end, it is essential that responsible military commanders coordinate fully with the appropriate military authorities responsible for air defense to make sure that conflicting situations can be resolved while emergency plans are still under development. The provisions of this section do not apply to Strategic Air Command (SAC) Emergency War Orders (EWO's) for which special coordination has been effected between SAC, NORAD, and FAA agencies.

### **B. INTENTION**

To establish coordination procedures necessary to fulfill air defense and air traffic control requirements for the movement of tactical air traffic and identify specific air NAVAID's which are essential to support contingency operations of major command forces during implementation of SCATANA.

### **C. EXECUTION**

1. Commanders of unified and specified commands (Responsible Military Commanders) will insure that:

a. The air traffic movement sections of their Emergency War Plans (including dispersal/evacuation and other related contingency plans) and the specific air NAVAID's essential to support contingency operations are fully coordinated during development with the appropriate military authority responsible for air defense. In the NORAD area of responsibility, the authority is the NORAD Region/Sector commander. When flights will transit more than one NORAD Region/Sector, coordination must be effected with all NORAD Region/Sector commanders involved.

b. Subsequent to the coordination required in the preceding paragraph, the air traffic movement section of their plans is to be provided to appropriate military and FAA regions. In the NORAD area of responsibility, the air movement section is to be provided to the commander of the NORAD Region/Sector in which the flights originate.

2. Responsible military authorities will:

a. During the coordination phase, insure that proposed aircraft movements do not conflict with other known movements or planned airspace utilization. Possible conflicts are to be resolved through negotiations with the commands involved.

b. On receipt of the tactical air movement section of the plan, review again their impact on the overall air situation and incorporate the information into the unit SCATANA Plan as supplements.

## SECTION VII. TEST PROCEDURES

### A. SITUATION

To insure ESCAT and SCATANA actions can be taken quickly, procedures for the notification of all action echelons, down to the lowest level, will be tested periodically.

### B. INTENTION

1. To specify procedures that will allow the NORAD Region/Sector to determine the time required and assure the capability to notify all agencies/personnel, down to the lowest action level, that ESCAT/SCATANA has been implemented.

- a. Aircraft will not be grounded or diverted.
- b. Air navigation aids will not be shut down.
- c. Test messages will not be transmitted over air/ground/air radio frequencies.
- d. Radio communications will not be interrupted.

#### 2. ESCAT Tests.

a. For ESCAT application testing, the Region/Sector SCATANA officer will notify the Air Traffic Control Command Center using the following statement:

"This is (NORAD Region/Sector) with a NORAD exercise message for (state exercise name). (Repeat) Simulate applying ESCAT for (specified area). ARTCCs acknowledge when appropriate agencies have been notified. This is an exercise message for (state exercise name)."

b. ARTCCs will notify all appropriate civil and military air traffic control and aeronautical facilities. Upon completion of all actions, the completion times will be forwarded to the ATCCC.

c. The ATCCC will provide completion times to the appropriate NORAD Region/Sector.

#### 3. SCATANA Tests.

a. For SCATANA testing, the NORAD Region/Sector SCATANA officer will notify the Air Traffic Control Command Center using the following statement:

"This is (Region/Sector) with a NORAD exercise message for (state exercise name). (Repeat) Simulate implementing SCATANA for (specified area). Priorities ( ) thru ( ). ATCCC

acknowledge when appropriate agencies have been notified. This is an exercise message for (state exercise name)."

b. ARTCCs will notify all appropriate civil and military air traffic control and aeronautical facilities. Upon completion of all actions, the completion times will be forwarded to the ATCCC.

c. The ATCCC will provide completion times to the appropriate NORAD Region/Sector.

4. ESCAT or SCATANA will be tested periodically but at least semi-annually. Tests will normally be conducted in conjunction with a Headquarters NORAD or NORAD Region/Sector exercise. Additionally, tests may be conducted by individual NORAD Regions/Sectors when test objectives are local in nature, with prior coordination with the ATCCC. (No-notice FAA tests will be coordinated with the FAA region and ADLO).

5. Headquarters NORAD/NCOO will direct NORAD Regions/Sectors to implement ESCAT/SCATANA tests IAW test procedures above.

## SECTION VIII. AUTHENTICATION

Authentication is not required between NORAD Region Operation Control Centers/Sector Operations Control Centers and the ATCCC for the implementation of SCATANA. However, if in the judgment of the ATCCC, a call back is necessary, implementation will be validated with a call back to the NORAD Region/Sector.

### APPROVED:

(s) William M. Taft,  
WILLIAM M. TAFT  
Deputy Secretary of Defense

(s) Jim Burnley  
JIM BURNLEY  
Deputy Secretary of Transportation

(s) Minnie Dawson  
MINNIE DAWSON  
Defense Commissioner, Federal Communications Commission

## Appendix 18.

### SPEED AUTHORIZATION GRANTED TO DOD

May 18, 1978

Mr. Paul H. Riley  
Alternate DOD Representative to FAA  
Deputy Assistant Secretary of Defense  
The Pentagon  
Washington, D.C. 20330

Dear Mr. Riley:

Section 91.70(a) of the Federal Aviation Regulations (FAR) provides that, unless otherwise authorized by the Administrator of the Federal Aviation Administration (FAA), no person may operate an aircraft below 10,000 feet mean sea level (MSL) at an indicated airspeed of more than 250 knots.

The regulation grants an exception to aircraft having flight characteristics which preclude safe operation at speeds below 250 knots by providing that if the minimum safe airspeed for any particular operation is greater than the maximum speed prescribed, the aircraft may be operated at that minimum safe airspeed.

In recognition of the fact that certain military operational and training requirements cannot be met under the terms of the regulation, the Department of the Navy and the Department of the Air Force have been authorized since November, 1967, to operate aircraft below 10,000 feet MSL at an indicated airspeed of more than 250 knots to the extent such high-speed operations were necessary in the accomplishment of air combat maneuvers and tactics, low-level navigation, low-level reconnaissance and intercept, weapons delivery tactics, flight test and evaluation, undergraduate pilot training, actual or simulated alert missions, and other flight operations of a similar nature.

Our authorization of November 1967, to each service, was rescinded and reissued to the Department of Defense (DOD) on June 8, 1976. The June 1976 authorization was rescinded and reissued on February 25, 1977. The February 1977 authorization was rescinded and reissued on December 19, 1977. Provisions are now needed to accommodate military requirements while airspace actions are pending. Therefore, effective immediately, the December 19, 1977, authorization is rescinded and reissued as follows:

Operations below 10,000 feet MSL at an indicated airspeed in excess of 250 knots, in noncompliance with FAR 91.70(a), are authorized for military aircraft, including Reserve and Air National Guard components, only under the following conditions:

- a. Within restricted areas.
- b. Within military operations areas.
- c. When operating within large scale exercises or on short term special missions. Coordination will be effected to insure awareness on the part of the nonparticipating flying public.
- d. When operating on DOD/FAA mutually developed and published IFR routes. The military necessity for each route and for the extent of use of each route is to be reviewed and approved by the appropriate military headquarters.
- e. When operating on DOD developed and published VFR routes. Such routes shall be established for specific missions and used only by designated units when the provisions of a. through d. above will not accommodate the required national defense mission as determined by appropriate military headquarters. Routes are to be developed and published in accordance with DOD/FAA mutually developed criteria.
- f. In the event provisions of a. through e. cannot be complied with, the appropriate military headquarters may authorize flight operations within defined airspace in noncompliance with FAR 91.70 as it considers necessary to accomplish the national defense mission. This provision is intended to accommodate speed requirements on an interim basis within a defined area for which an area/route proposal has been coordinated and concurred in by appropriate military/FAA regional authority but not yet published.

g. If the airspeed required or recommended in the airplane flight manual to maintain safe maneuverability is greater than the maximum speed described in FAR 91.70, the aircraft may be operated at that speed. Where the required or recommended speed is given as range, the lower part of the speed range should be used consistent with good operating practice. This provision is primarily to accommodate climbs/descents and terminal area operations.

This authorization is effective immediately. Operations along VFR low altitude training routes (TR), which were established in accordance with FAA Handbook 7610.4C, Part 10, and in existence at the time of this authorization may be continued until January 1, 1979.

Sincerely,

(s) Raymond G. Belanger  
RAYMOND G. BELANGER  
Director, Air Traffic Service



U.S. Department  
of Transportation  
Federal Aviation  
Administration

7610.4J  
11/3/98

# BRIEFING GUIDE



**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

This briefing guide contains significant changes which were made in Order 7610.4J. Changes such as editorial, organizational, and acronyms were made throughout the order, but will not appear in the briefing guide.

**1. PARAGRAPH NUMBER AND TITLE: Chapter 1, Section 3, (1-32), 1-3-1 ABBREVIATIONS**

**2. BACKGROUND:** This change provides updates and corrections to commonly used Abbreviations. There have been changes in several military commands that are reflected in the additions and deletions of terms. This change will make clear the meanings of the abbreviations.

**3. CHANGE:**

<u>OLD</u>	<u>NEW</u>
<b>1-32 ABBREVIATIONS</b>	<b>1-3-1 ABBREVIATIONS</b>
<u>AAC-Alaskan Air Command</u>	Delete
Add	<u>AAC-Air Combat Command</u>
Air Combat <u>Training</u>	ACT- Air Combat <u>Tactics</u>
<u>AFCC-Air Force Communications Command</u>	Delete
Add	<u>AFSS-Automated Flight Service Station</u>
AIM- <u>Airman's</u> Information Manual	AIM - <u>Aeronautical</u> Information Manual
Add	<u>AMC-Air Mobility Command</u>
Add	<u>AOC-Aircraft Operations Center (NOAA)</u>
Add	<u>AST-Air Sovereignty Test</u>
ATCCC-Air Traffic Control Command Center	<u>ATCSCC</u> -Air Traffic Control <u>System</u> Command Center
Add	<u>ATSC-Air Traffic Services Cell</u>
AUTOVON-Automatic Voice Network Switching	Delete
Add	<u>CARCHA-Chief, Aerial Reconnaissance Coordination, All Hurricanes</u>
Add	<u>CARU-Canadian Altitude Reservation Unit</u>
Add	<u>CERAP-Combined Center/Approach Control</u>
CINCPACAF-Commander in Chief, Pacific Air Forces	<u>CINCPAC</u> -Commander in Chief, Pacific Air Forces
Cmb-Climb	<u>CMB-Climb</u>
Add	<u>CTA-Control Area</u>
Add	<u>CTA/FIR-U.S. Control Airspace/Flight Information Region</u>
DO-Director of Operation	Delete
Add	<u>DSN-Defense Switched Network</u>
Add	<u>FIR-Flight Information Region</u>
Add	<u>HHCL-H Hour Control Line</u>
Add	<u>IP-Initial Point</u>
IP/HHCL-Initial Point/H-hour Control Line	Delete
Add	<u>JCS-Joint Chiefs of Staff</u>
Add	<u>LANTIRN- Low Altitude Navigation and Targeting Infrared for Night</u>
<u>MAC - Military Airlift Command</u>	Delete
<u>MACLO-Military Airlift Command Liaison Officer</u>	Delete
<u>NAVLO-FAA Liaison Officer to the U.S. Navy</u>	Delete



Add	<u>NADIN - National Airspace Data Interchange Network</u>
Add	<u>NOAA-National Oceanic and Atmospheric Administration</u>
Add	<u>NHOP-National Hurricane Operations Plan</u>
Add	<u>NWSOP-National Winter Storm Operations Plan</u>
Add	<u>OG-Operations Group Commander</u>
Add	<u>OSS/CC-Operations Support Squadron Commander</u>
<u>PCA-Positive Control Area</u>	Delete
Add	<u>RTE-Route</u>
<u>SAC-Strategic Air Command</u>	Delete
<u>SACLO-Strategic Air Command Liaison Officer</u>	Delete
Add	<u>SADL-Scramble At Deployed Location</u>
Add	<u>SAMS-Special Use Airspace Management System</u>
<u>SPADE-Air Sovereignty Test (U.S.)</u>	<u>SPADE-Special Penetration Air Defence Exercise</u>
<u>SUADE-Air Sovereignty Test (Canada)</u>	Delete
<u>SWAO-Senior Weapons Assignment Officer</u>	Delete
<u>TAC-Tactical Air Command</u>	Delete
<u>TACLO-Tactical Air Command Liaison Officer</u>	Delete
<u>TACS-Tactical Air Control System</u>	<u>TACS-Theater Air Control System</u>
Add	<u>TAS-True Airspeed</u>
<u>UTC-Universal Coordinated Time</u>	<u>UTC-Coordinated Universal Time</u>
Add	<u>WX RECON-Weather Reconnaissance</u>

**4. OPERATIONAL IMPACT:** This change makes it necessary for a thorough review of the Abbreviations section. There have been a number of additions and deletions that need to be incorporated into the work environment. The majority of the changes have been made to reflect current usage of terms.

#### 1-31 DEFINITIONS

**Air Defense Control Facility (ADCF).** A military radar unit (MRU), including AWACS when fully MRU capable, primarily used for air defense. ADCF's are the only MRU's authorized to operate interceptors subject to conditions outlined in the AFIO.

Add

Add

#### 1-3-2 DEFINITIONS

**Air Defense Control Facility (ADCF).** A military radar unit (MRU) (ROCC/SOCC/AWACS) primarily used for air defense, including air sovereignty and counter-drug operations. ADCF's are the only MRU's authorized to control interceptors.

#### NOTE-

Specifically designated military units, when identified, may provide augmentation for NORAD and function as ADCF's.

**AIR DEFENSE IDENTIFICATION ZONE (ADIZ).** The area of airspace over land or water, extending upward from the surface, within which the ready identification, the location, and the control of aircraft are required in the interest of national security.

Add

**a. Domestic Air Defense Identification Zone. An ADIZ within the United States along an international boundary of the United States.**

Add

**b. Coastal Air Defense Identification Zone. An ADIZ over the coastal waters of the United States.**

Add

**c. Distant Early Warning Identification Zone (DE-WIZ). An ADIZ over the coastal waters of the State of Alaska. ADIZ locations and operating and flight plan requirements for civil aircraft operations are specified in CFR 14 part 99. (Refer to the (AIM).)**

**ICAO-Air Traffic Control Service. A service provided for the purpose of:**

Delete

**a. Preventing collisions:**

Delete

**(1) Between aircraft, and**

Delete

**(2) On the maneuvering area between aircraft and obstructions, and**

Delete

**b. Expediting and maintaining an orderly flow of air traffic.**

Delete

Airborne Warning and Control System (AWACS). An airborne military radar unit engaged in radar surveillance and/or control of aircraft for the purpose of training, exercise, or air defense,

Airborne Warning and Control System (AWACS). An airborne military radar unit engaged in radar surveillance and/or control of aircraft for the purpose of training, exercise, **air defense, and counter-drug operations.**

Aircraft Surge, Launch and Recovery (ASLAR). Procedures **established to provide for the increased launch and recovery rates required during wartime contingency/surge operations. Procedures will be outlined in local letters of agreement.**

Delete

**Alert Area.** Airspace which may contain a high volume of pilot training activities or an unusual type aerial activity, neither of which is hazardous to aircraft. Alert Areas are depicted on aeronautical charts for the information of non-participating pilots. All activities within an Alert Area are conducted in accordance with Federal Aviation Regulations, and pilots of participating as well as pilots transiting the area are equally responsible for collision avoidance.

**Alert Area.** Special ~~use~~ airspace which may contain a high volume of pilot training activities or an unusual type aerial activity, neither of which is hazardous to aircraft. Alert Areas are depicted on aeronautical charts for the information of non-participating pilots. All activities within an Alert Area are conducted in accordance with Federal Aviation Regulations, and **all** pilots transiting the area are equally responsible for collision avoidance.

Add

**Alternate Route (AR). A preplanned departure track designed to allow receivers to depart in one direction and tanker support to depart in another direction from the same airport with the intent to rendezvous for scheduled air refueling.**

**Basic Flight Maneuvers (BFM).** The maneuvers in which **an** ACT pilot must be skilled in order to effectively employ **his** weapons system in air combat maneuvers or defensive combat maneuvers.

**Basic Flight Maneuvers (BFM).** The maneuvers in which ACT **pilots** must be skilled in order to effectively employ weapons systems in air combat maneuvers or defensive combat maneuvers.

Add

**Branch Route (BR). A track of an ALTRV that is defined from the breakaway point from a common route to the next fix or the final destination.**

Burst. A code word signifying chaff drops at intervals long enough to appear on radar displays as individual target returns.

Delete

Codes (Transponder Codes). The number assigned to a particular multiple pulse signal transmitted by a Transponder.

Delete

Add

Common Route (CR). The receivers planned common route in a ALTRV from point of departure to destination excluding branch route or other join-up tracks.

Contiguous U.S. Air Defense Identification Zone (ADIZ). The area of airspace over land or water, extending upward from the surface, within which the ready identification, the location, and the control of aircraft are required in the interest of national security. ADIZ locations, operating, and flight plan requirements for civil aircraft operations are specified in FAR Part 99. (Refer to AIM).

Delete

Continental Control Area. (See controlled airspace.)

Delete

Continental United States. The 49 States located on the continent of North America and the District of Columbia.

Delete

Controlled Airspace. Airspace, designated as a continental control area, control area, control zone, terminal control area, or transition area within which some or all aircraft may be subject to air traffic control. (Refer to AIM, FAR Part 71)

Controlled Airspace. An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification.

Add

NOTE-  
Controlled airspace is a generic term that covers Class A, Class B, Class C, Class D, and Class E airspace.

Types of U.S. Controlled Airspace:

Delete

a. Continental Control Area. The airspace of the 48 contiguous States, the District of Columbia, and Alaska, including the Alaska peninsula west of Long. 160 00°00"W at and above 14,500 feet MSL, but does not include:

Delete

(1) The airspace less than 1,500 feet above the surface of the earth, or

(2) Prohibited and restricted areas, other than the restricted areas listed in FAR Part 71.

b. Control Area. Airspace designated as Colored Federal AIRWAYS, VOR Federal AIRWAYS, Terminal Control Areas, Additional Control Areas, and Control Area Extensions, but not including the Continental Control Area. Unless otherwise designated, control areas also including the airspace between a segment of a main VOR AIRWAY and its associated alternate segments. The vertical extent of the various categories of airspace contained in control areas are defined in FAR Part 71.

Delete

ICAO-Control Area. A Controlled Airspace extending upward from a specified limit above the earth.

Delete

c. Control Zone. Controlled Airspace which extends upward from the surface and terminates at the base of the continental control area. Control Zones that do not underlie the continental control area have no upper limit. A control zone may include one or more airports and is normally a circular area within a radius of 5 statute miles and any extensions necessary to include instrument approach and departure paths.

Delete

d. Terminal Control Area (TCA). Controlled Airspace extending upward from the surface or higher to specified altitudes, within which all aircraft are subject to operating rules and pilot and equipment requirements specified in FAR Part 91. Graphics of all TCA's, their airspace limitations and associated communications frequencies are shown in DOD FLIP. TCA's are depicted on Sectional World Aeronautical, En Route Low Altitude and TCA charts. (Refer to FAR Part 91).

Delete

ICAO-Terminal Control Area. A control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes.

Delete

e. Transition Area. Controlled Airspace extending upward from 700 feet or more above the surface of the earth when designated in conjunction with an airport for which an approved instrument approach procedure has been prescribed, or from 1,200 feet or more above the surface of the earth when designated in conjunction with airway route structures or segments. Unless otherwise limited, transition areas terminate at the base of the overlying controlled airspace. Transition areas are designed to contain IFR operations in Controlled Airspace during portions of the terminal operation and while transiting between the terminal and the en route environment.

Delete

Controlled Firing Area (CFA). Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to non-participating aircraft and to ensure the safety of persons and property on the ground.

Controlled Firing Area (CFA). **Special use** airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to non-participating aircraft and to ensure the safety of persons and property on the ground.

Correlation Line. A reference line established by the NORAD, PACAF, or PIAD Region Commander from which penetration or time-over for a flight is computed for the purpose of flight plan correlation.

Correlation Line. A reference line established by the NORAD, PACAF, or PIAD Region/**Sector** Commander from which penetration or time-over for a flight is computed for the purpose of flight plan correlation.

Add

**Due Regard. A phase of flight wherein a State-operated aircraft assumes responsibility to separate its aircraft from all other aircraft. DOD operators must comply with DOD's regulations concerning "due regard."**

Entry Point. A point which denotes the beginning of a Low Altitude Route.

Entry Point. A point which denotes the beginning of a **particular route of flight; i.e., MTR.**

Exercise Flush. The phraseology used for testing flush operations.

Exit Point. A point which denotes the end of a Low Altitude Route.

Add

Flight Plan. Specified information relation to the intended flight of an aircraft that is filed orally or in writing with a AFSS/FSS or ATC facility. (Refer to AIM).

Handoff Point (HOP). The point with which an aircraft's position is correlated when transferring target identify during a radar handoff. When using nonradar procedures, the HOP is the point where control responsibility is transferred unless otherwise specified.

High Altitude Operations. Operations conducted at or above FL 180 (FL 240 in Alaska).

Instrument Flight Rules (IFR). Rules governing the procedures for conducting instrument flight. Also a term used by pilots and controllers to indicate type of flight plan. (See Visual Flight Rules, Instrument Meteorological Conditions, Visual Meteorological Conditions.) (Refer to AIM).

Instrument Meteorological Conditions (IMC). Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling less than the minima specified for visual meteorological conditions. (See Visual Meteorological Conditions, Instrument Flight Rules, Visual Flight Rules.)

Long Range Defense Team (LRDT). A composite air defense force normally consisting of an airborne military radar unit, tanker, and fighter/interceptor aircraft.

Low Altitude Operations. Operations conducted below FL 180 (240 in Alaska).

Military Operations Area (MOA). A MOA is an airspace assignment of defined vertical and lateral dimensions established outside positive control area to separate/segregate certain military activities from IFR traffic and to identify for VFR traffic where these activities are conducted.

Exercise Flush. The phraseology used for testing flush operations. **NORAD has a requirement to practice these procedures. Actual flush procedures are classified.**

Exit Point. A point which denotes the end of a particular route of flight; i.e., **MTR, air refueling track, etc.**

**FAA Authorization for Interceptor Operations (AFIO). An authority used for the movement of interceptors under NORAD operational jurisdiction while on an active air defense mission when it is determined by competent military authority that operations within the NAS would significantly derogate the mission.**

Flight Plan. Specified information relating to the intended flight of an aircraft that is **filed with a AFSS/** FSS or an ATC facility. (Refer to the AIM.)

Handoff Point (HOP). The Point with which an aircraft's position is correlated when transferring target identity during a radar handoff. When using nonradar procedures, the HOP is the **time/fix/altitude** where control responsibility is transferred unless otherwise specified.

Delete

Delete

Delete

Long Range Defense Team (LRDT). A composite air defense force normally consisting of an **AWACS**, tanker, and fighter/interceptor aircraft.

Delete

Military Operations Area (MOA). **Special use** airspace of defined vertical and lateral dimensions established outside **Class A airspace** to separate/segregate certain **nonhazardous** military activities from IFR traffic **in controlled airspace** and to identify for VFR traffic where these activities are conducted.

Military Radar Unit (MRU). Any fixed or mobile ground based unit under the operational jurisdiction of the military services excluding commissioned ATC facilities. This includes the AWACS aircraft when it meets the requirements stated in Chapter 13 and following of this order. MRUs will provide services in accordance with the letter of agreement with the appropriate air traffic control facilities, however, MRUs shall not provide ATC services.

Add

Minimum En Route IFR Altitude (MEA). The lowest published altitude between radio fixes which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. The MEA prescribed for an AIRWAY or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the AIRWAY, segment, or route between the radio fixes defining the AIRWAY, segment, or route. (Refer to FAR Part 91 and 95, AIM.)

Add

ICAO-Mode (SSR Mode). The letter or number assigned to a specific pulse spacing of the interrogation signals transmitted by an interrogator. There are 4 modes, A, B, C, and D corresponding to four different interrogation pulse spacings.

a. NOTAM (D). A NOTAM given (in addition to local dissemination) distant dissemination via teletypewriter beyond the area of responsibility of the Flight Service Station. These NOTAM's will be stored and repeated hourly until canceled.

b. NOTAM (L). A NOTAM given local dissemination by voice, (Teletypewriter where applicable), and a wide variety of means such as:

ICAO-NOTAM. A notice, containing information concerning the establishment, condition, or change in any aeronautical facility, service, procedure, or hazard the timely knowledge of which is essential to personnel concerned with flight operations.

Military Radar Unit (MRU). Any fixed or mobile ground-based unit under the operational jurisdiction of the military services excluding commissioned ATC facilities. This includes the AWACS aircraft when it meets the requirements of this order. MRU's will provide services in accordance with the letter of agreement with the appropriate ATC facilities, however, MRUs shall not provide ATC services.

Military Training Route (MTR). Routes developed for use by the military for the purpose of conducting low-altitude, high-speed training.

Minimum En Route IFR Altitude (MEA). The lowest published altitude between radio fixes which assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. The MEA prescribed for an airway or segment thereof, area navigation low or high route, or other direct route applies to the entire width of the airway, segment, or route between the radio fixes defining the airway, segment, or route.

Minimum Navigational Performance Standards (MNPS). A specified set of minimum navigational performance standards which aircraft must meet in order to operate in MNPS-designated airspace. This is to insure safe operation of aircraft through reduced separations standards resulting from the improvement in accuracy of enhanced navigational equipment.

Delete

a. NOTAM(D). A NOTAM given (in addition to local dissemination) distant dissemination via data communications equipment beyond the area of responsibility of the Flight Service Station. These NOTAM's are stored and repeated hourly until canceled.

b. NOTAM (L). A NOTAM given local dissemination by voice, data communication equipment, and a wide variety of means such as: telautograph, teleprinter, facsimile reproduction, hot line, telecopier, telegraph, and telephone to satisfy local user requirements.

Delete

Add

Open Skies. A treaty based on complete territorial openness, addressing the use of unarmed observation aircraft with sensors, and annual quotas of observation flights which each State Party is willing to accept, and entitled to conduct. Open Skies aircraft shall take priority over any regular air traffic.

Add

Partial Route (PR). A track of an ALTRV that begins at the international boundary for aircraft inbound from an international airport to the CONUS; or a track that is connected to a DD-175/DD-1801 (domestic flight plan).

Add

Penetrating Traffic. Traffic whose protected airspace, as defined in pertinent regulations, infringes upon another authority's area of jurisdiction or responsibility when measured from the center line of the route of flight or the edge of a stationary ALTRV boundary.

Popeye. In clouds or area of reduced visibility.

Delete

Positive Control Area (PCA). Airspace designated in FAR Part 71 wherein aircraft are required to be operated under Instrument Flight Rules (IFR). Vertical extent of PCA is from 18,000 feet to and including flight level 600 throughout the conterminous United States. In Alaska, it includes the airspace over the State of Alaska from 18,000 feet to and including FL 600, but not including the airspace less than 1,500 feet above the surface of the earth, and the Alaskan Peninsula west of longitude 160 00'00"W. Rules for operating in positive control area are found in FAR's 91.97 and FAR 91.24. (Refer to FAR Parts 71 and 91, AIM, and DOD FLIP).

Delete

Prohibited Area. Designated airspace within which the flight of aircraft is prohibited.

Prohibited Area. Airspace designated under 14 CFR 73 within which no person may operate an aircraft without the permission of the using agency.

ICAO-Radar Contact. The situation which exists when the radar blip of a particular aircraft is seen and identified on a radar display.

Delete

ICAO-Radar Identification. The process of correlating a particular radar blip with a specific aircraft.

Delete

ICAO-Radar Separation. The separation used when aircraft position information is derived from radar sources.

Delete

ICAO-Radar Monitoring. The use of radar for the purpose of providing aircraft with information and advice relative to significant deviations from nominal flight path.

Delete

Refueling Level. A block of consecutive cardinal altitudes from ARIP to egress point within which entry into the refueling track, maneuvering to rendezvous, and transfer of fuel will be accomplished.

Refueling Level. A block of consecutive altitudes/flight levels from ARIP to exit point within which entry into the refueling track, maneuvering to rendezvous, and transfer of fuel will be accomplished.

Regional Operations Control Center (ROCC). (Alaska and Canada only.) A NORAD facility tasked to manage air defense operations in a designated operational area. (ROCCs are also considered SOCCs)

ICAO-Reporting Point. A specified geographical location in relation to which the position of an aircraft can be reported.

Restricted Area. Airspace designated under FAR Part 73 within which the flight of aircraft, while not wholly prohibited, is subject to restriction.

Road Reconnaissance (RC). Military activity requiring navigation along roads, railroads, and rivers. Reconnaissance route/route segments are seldom along a straight line and normally require a lateral route width of 10 nm to 30 nm and an altitude range of 500 feet to 10,000 feet AGL

Sector Operations Control Center (SOCC). A radar facility which has the capability to control air defense operations in a designated area. This is a subordinate unit of a NORAD Region.

Add

Small Scale ECM Mission. ECM performed by one to six aircraft working as a unit.

Add

Stationary Reservations. Altitude reservations which encompass activities in a fixed area. Stationary reservations may include activities such as special test of weapons systems or equipment, certain U.S. Navy carrier, fleet, and antisubmarine operations, rocket, missile and drone operations, and certain aerial refueling, or similar operations.

Stereotype Route. Precoordinated route of flight which may be stored in the ARTCC computer.

Add

Regional Operations Control Center (ROCC). A NORAD facility tasked to manage air defense operations in a designated area within the NORAD area of operations. (Alaskan ROCC also functions as a NORAD sector operations control center-SOCC.)

Delete

Restricted Area. Special use airspace designated under 14 CFR 73 within which the flight of aircraft, while not wholly prohibited, is subject to restriction.

Delete

Sector Operations Control Center (SOCC). A military radar unit which has the capability to regulate air defense operations in a designated area. This is a subordinate unit of a ROCC.

Slow Route (SR). Low-level route(s) at or below 1,500 AGL and at 250 KIAS or less. SR's are published in the Flight Information Publication (FLIP) AP/1B.

Delete

Special Penetration Air Defense Exercise (SPADE). A no-notice exercise in which an aircraft on a NOPAR flight plan or ALTRV tests the detection, identification, and reporting functions of the air defense forces (ADCF's and interceptor/flight units).

Stationary Reservations. Altitude reservations which encompass activities in a fixed area. Stationary reservations may include activities such as special test of weapons systems or equipment, certain U.S. Navy carrier, fleet, and anti-submarine operations, rocket, missile and RPV operations, and certain aerial refueling, or similar operations.

Stereo-route. Pre-coordinated route of flight which may be stored in the ARTCC/CERAP computer.

Stream Formation. Two or more aircraft or cells of aircraft operating on the same route with more than one (1) minute but not more than 15 minutes longitudinal spacing between aircraft (or cells), laterally contained within the route width to be protected, and utilizing normally 3,000 consecutive feet of altitude.



System Strategic Navigation (SN). Military activity accomplished by navigating along a preplanned route using internal aircraft systems to maintain a desired track. This activity normally requires a lateral route width of 10 nm and an altitude range of 1,000 feet to 6,000 feet AGL with some route segments that permit terrain following.

Delete

Add

Tactical Air Control System (TACS). A military radar unit.

Synoptic Surveillance. Weather reconnaissance mission flown to provide mid- and/or upper-tropospheric sounding data on the periphery of tropical systems in data-sparse areas. Synoptic flights better define the upper atmosphere and aid in the prediction of tropical cyclone motion and intensity.

Theater Air Control System (TACS). TACS is an Air Force system composed of various ground and air-borne command and control elements that plan and direct combat operations through centralized command, decentralized execution. TACS air defense radar elements include the Control Reporting Center (CRC), the Control and Reporting Element (CRE) and AWACS.

Delete

Visual Flight Rules (VFR). Rules that govern the procedures for conducting flight under visual conditions. The term "VFR" is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate type of flight plan. (See Instrument Flight Rules, Instrument Meteorological Conditions, Visual Meteorological Conditions.) (Refer to FAR Part 91, AIM).

Visual Meteorological Conditions (VMC). Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling equal to or better than specified minima. (See Instrument Flight Rules, Instrument Meteorological Conditions, Visual Flight Rules.)

Delete

Warning Area. Airspace of defined dimensions over international waters that contains activity which may be hazardous to non-participating aircraft.

Warning Area. A warning area is airspace of defined dimensions, extending from 3 nautical miles outward from the coast of the United States, that contains activity that may be hazardous to nonparticipating aircraft. The purpose of such warning areas is to warn nonparticipating pilots of the potential danger. A warning area may be located over domestic or international waters or both.

Add

Weather Reconnaissance (WX RECON). Missions flown by the 53 WRS under the TEAL call sign for the purpose of gathering meteorological data from specific millbrae levels in both tropical and winter weather systems.

**4. OPERATIONAL IMPACT:** This change adds new definitions to the everyday work situation. Particular attention should be given to this section to assure familiarity with the new terms and definitions. Many terms have been revised to reflect common usage of the word.

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**1. PARAGRAPH NUMBER AND TITLE:** 1-4-2 Approach Control Authority.

**2. BACKGROUND:** This provides certification requirement for military ATC facilities to provide air traffic services. There is additional requirements for the GCA letter of agreement.

**3. CHANGE:**

**OLD**

**1-41 APPROACH CONTROL AUTHORITY**

The regional AT division may delegate approach control authority to the military at locations not served by an FAA approach control facility.

**1-46 EVALUATION BY THE AIR TRAFFIC DIVISION**

At locations not served by an ATREP, qualified AT division personnel shall evaluate semi-annually the military approach control facility, military tower if located on a joint-use, and military GCA unit if associated with a nonradar approach control tower. The intent of the evaluation is to determine that:

**NEW**

**1-4-2 APPROACH CONTROL AUTHORITY**

The regional AT division may delegate air traffic control authority, at a location not served by an FAA facility, to a military ATC facility certified to provide air traffic services.

**1-4-6 EVALUATION BY THE AIR TRAFFIC DIVISION**

At locations not served by an ATREP, qualified AT division personnel/designated representative shall evaluate annually the military approach control facility, military tower if located on a joint-use airport, and military GCA unit if associated with a nonradar approach control tower. The intent of the evaluation is to determine that:

**4. OPERATIONAL IMPACT:** Subpara 1-4-11e1 establishes additional requirements for inclusion in the letter of agreement with the GCA unit.

**1. PARAGRAPH NUMBER AND TITLE:** 1-5-3, Familiarization Flights.

**2. BACKGROUND:** This change clarifies familiarization flights of Air Traffic Representatives and renumber paragraphs.

**3. CHANGE:**

**OLD**

**1-54 FAMILIARIZATION FLIGHTS**

ATREPs assigned at military facilities should participate in familiarization flightson various types of military aircraft as a passenger/crew member where permitted. Except for extenuating circumstances, during the first year of duty an ATREP should complete one flight every 6 months in each unit eq\_ rement. When unit resources are available and unit mission is not degraded, the ATREP should attempt to complete on flight every 6 months in each unit-equipped aircraft.

Add

**NEW**

**1-5-3 FAMILIARIZATION FLIGHTS**

The ATREP, during the first year of duty, should complete one familiarization flight every 6 months in the unit's primary aircraft and, thereafter, one flight per year. When unit resources are available and unit mission is not degraded, the ATREP should attempt to complete a flight every 6 months in each unit-equipped aircraft.

**NOTE-**

It is mutually beneficial for controllers and pilots to familiarize themselves with the others' duties and responsibilities. It is highly encouraged that familiarization trips be approved. FAA controller familiarization trips on military aircraft are governed by FAA Order 3120.29, Familiarization Training Program.

**1-55 MEDICAL CERTIFICATION**

Delete

In support of the flight familiarization requirement, ATREPs shall possess Medical Clearance. Personnel who cannot participate in these flying activities because of physical reasons, or who do not desire to do so, shall be reassigned.

**1. PARAGRAPH NUMBER AND TITLE: 2-1-2 Policy.**

**2. BACKGROUND:** This change modified Military Airspace Planning section to reflect changes in FAA Order 7400.2

**3. CHANGE:****OLD****NEW****2-2 POLICY**

Exercises will be planned, insofar as possible, to be conducted within the National Airspace System (NAS). During initial planning with the FAA, a decision will be made to determine the capability of the FAA to provide ATC services for the entire exercise, or the extent to which services can be provided. Airspace requirements must be identified at this initial planning stage to ensure adequate processing time for airspace actions. Efforts will be made to minimize conflicts with other operations being conducted in the area.

**2-1-2 POLICY**

Exercises will be planned, insofar as possible, to be conducted within the NAS. Exercise planners shall coordinate with the affected ATC facilities all pertinent data relative to the mission. During initial planning with the FAA, a decision will be made to determine the capability of the FAA to provide ATC services for the entire exercise, or the extent to which services can be provided. Airspace requirements must be identified at this initial planning stage to ensure adequate processing time for airspace actions. Efforts will be made to minimize conflicts with other operations being conducted in the area.

**2-4 SPECIAL USE AIRSPACE**

a. The establishment of Special Use Airspace as defined in FAA Order 7400.2, Procedures for Handling Airspace Matters, for planned exercises shall be processed through the appropriate FAA regional military representative. Airspace for other exercises shall be coordinated with the appropriate ARTCC.

**2-1-4 SPECIAL USE AIRSPACE**

a. The establishment of Special Use Airspace as defined in FAA Order 7400.2, Procedures for Handling Airspace Matters, for planned exercises shall be processed through the appropriate FAA regional military representative. Other airspace; i.e., ATC assigned airspace (ATCAA), Air Refueling Tracks, etc., shall be coordinated with the appropriate ARTCC.

c. Non-approval of exercise airspace must be justifiable and only after every effort has been expended to reach a mutual understanding with the appropriate military representatives. The appropriate military authority when denied exercise airspace may request the regional military representative to obtain further consideration from the FAA regional Air Traffic division.

c. The appropriate military authority, when denied exercise airspace, may request the regional military representative to obtain further consideration from the FAA regional Air Traffic division.

Add

Add

**2-1-5 MILITARY AIRSPACE PLANNING**

To assist FAA and military personnel in planning and preparing for military exercises that require establishment of temporary special use airspace, the following listing of information items has been developed.

**REFERENCE-**

FAAO 7400.2, Procedures for Handling Airspace Matters

Add

a. After all coordination has been completed and in sufficient time to process an airspace action, if needed, (FAA Order 7400.2), a formal proposal should be submitted to the appropriate FAA Region Office. The proposal should include:

1. Name of exercise
2. Location and description of temporary SUA
3. Time of designation
4. Controlling and using agency
5. Complete justification for the airspace to include:
  - (a) Number of aircraft involved.
  - (b) Types of aircraft and missions they will perform.
  - (c) The exercise concept of operation (scenario).
6. A statement explaining if the entire exercise area, as requested, is for the complete exercise period, or does the scenario allow for real-time coordination and release of a portion of the area. If a portion can be released, specify each portion providing vertical and horizontal dimensions and for what period of time.
7. Requirements for refueling tracks, location, VFR or IFR, in or below Class A airspace.
8. Commands that will participate in the exercise.
9. Requirements for FAA liaison personnel at exercise facilities and military liaison personnel at affected FAA facilities.
10. Provisions to be made for nonparticipating aircraft desiring to operate within exercise the area.
  - (a) Local airport operations.
  - (b) Ingress and egress routes.
  - (c) Over flights.
  - (d) Capability of the using agency to accept direct radio requests from pilots.

Add

b. Four months prior to the proposed effective date, the proponent furnishes the following data:

1. Bases to be used as staging airfields and the estimated volume of activity at each.
2. Inactive bases to be activated and their locations.
3. Military control facilities or navigational aids to be established where none now exists for use by participating aircraft outside of exercise area. Information provided should include locations and frequencies.

Add

4. Requirements for ingress and egress areas (vector areas).

5. Requirements for routes from staging bases to include estimated volume of use.

6. Location of military air traffic facilities.

7. Requirements for military control of exercise traffic outside of the exercise area.

c. Three months prior to beginning of the exercise:

1. Make provisions to assure that participating pilots are provided the capability of closing VFR flight plans.

2. Provide information concerning other activities not mentioned which will require development of special operating procedures and/or FAA military agreements.

Add

d. Forty-five (45) days prior to beginning of exercise:

1. Provide any additional information deemed necessary by FAA or the exercise proponent.

2. Provide copies of all established procedures and agreements for distribution to FAA and military personnel who require this information.

Add

Add

#### 2-1-6 CHANGES IN REQUIREMENTS

Changes to the exercise should not be made within 45 days of the exercise unless they are absolutely essential to the safe and successful conduct of the exercise, or to reduce the amount of SUA to be designated.

**4 OPERATIONAL IMPACT:** The new paragraph 2-1-5 MILITARY AIRSPACE PLANNING reflects the procedures contained in FAA Order 7400.2. Paragraph 2-1-5 places time requirements for submitting a formal proposal to the FAA Regional Office. Paragraph 2-1-6 adds requirements for changing the proposed exercise. A through review of the provisions of this section is suggested.

**1. PARAGRAPH NUMBER AND TITLE:** 2-4-2, Notification of ORI.

**2. BACKGROUND:** This change reflects the change in military major commands and renumbers paragraphs.

**3. CHANGE:**

#### OLD

#### NEW

#### 2-42 NOTIFICATION OF ORI

- (1) Mission nicknames (from ORI books).
- (3) Initiation hour ("I" hour) - the earliest time a unit may be told of the mission timing.
- (4) Execution reference time (mission take-off time).

#### 2-4-2 NOTIFICATION OF ORI

- a. Mission names (from ORI books).
- c Initiation hour ("**I**" hour) - the earliest time a unit may be told of the mission timing.
- d. Execution reference time ("**ERT**") - hour mission take-off time.

**2-43 NOTIFICATION FORMAT**

CARF will forward the information to the required ARTCC's no later than 30 days prior to the departure date of the mission. The ARTCC's will be provided the following information via the AFTN network.

**2-4-3 NOTIFICATION FORMAT**

CARF shall forward the ORI mission notification information to the required ARTCC/CERAP(s) no later than 30 days prior to the departure date of the mission. The ARTCC/CERAP's shall be provided the current information, as provided by IGXP, NLT 15 days prior to the mission via the AFTN network as follows:

**4. OPERATIONAL IMPACT: None.****1. PARAGRAPH NUMBER AND TITLE: 2-6-1, Air Capable Ship Operations.**

**2. BACKGROUND:** This changes clarifies coordination of flight operations and liaison visits.

**3. CHANGE:****OLD****2-61 AIR CAPABLE SHIP OPERATIONS**

Air capable ship type training which may include cyclic operations, ALFA strikes, and launch sequence plans shall be coordinated in advance with the ARTCC's involved with providing IFR service to the aircraft from air capable ships. Specific time requirements for advance notification should be covered in letters of agreement between the ARTCC and the local Navy command.

**2-67 LIAISON**

Procedures shall be developed to provide for liaison visits to the aircraft carrier by ARTCC personnel. Carrier air wing and air operations personnel shall develop procedures to visit the ARTCC's.

**NEW****2-6-1 AIR CAPABLE SHIP OPERATIONS**

Flight Operations involving air capable ships may include cyclic operations and ALFA strikes. Launch sequence plans shall be coordinated in advance with the ARTCC/CERAP's involved with providing IFR service to the aircraft from air capable ships. Specific time requirements for advance notification should be covered in letters of agreement (LOA) between the ARTCC/CERAP's and the local Navy command.

**2-6-7 LIAISON**

Procedures shall be developed to provide for liaison visits to the aircraft carrier by representative personnel from the impacted ATC facility. Carrier air wing and air operations personnel shall develop procedures to visit ATC facilities.

**4. OPERATIONAL IMPACT: None.****1. PARAGRAPH NUMBER AND TITLE: 2-7-2, General.**

**2. BACKGROUND:** This change deleted obsolete missions and requirements, i.e., Snow Time. Identifies the reorganized military major commands and their responsibilities. Clarified Electronic Counter Measures approval authority, defined ECM sponsor requirements.

**3. CHANGE:****OLD****2-72 GENERAL****NEW****2-7-2 GENERAL**

All ECM activity to be employed in a mission/exercise shall be coordinated with the appropriate FAA regional Frequency Management Office (FMO). Coordination must be effected prior to approval of the mission/exercise. The responsibility for coordination with the FAA regional FMO rests with the military unit planning the ECM activity. Coordination with HQ FAA Spectrum Engineering Office will be completed through normal military command channels by the military service FMO. Final FAA authorization will be given in writing by HQ FAA. (Refer to FAA Order 7610.11).

## **2-73 SNOW TIME EXERCISES**

"Show Time" exercises are ECM missions designed to evaluate the tactics of both the aircraft and ground environment and to satisfy certain training requirements of the U. S. military forces.

## **2-74 PARTICIPATION**

At the direction of Headquarters SAC, specified units will launch aircraft at selected intervals against pre-planned NORAD/ADCOM areas. The faker force will contain a large number of SAC and other supplementary aircraft equipped with varied loadings of electronic warfare equipment. In addition, interceptor aircraft from ADCOM, ANG, and TAC may be programmed to participate.

## **2-75 COORDINATION**

These exercises shall be coordinated by the military forces at conferences with affected FAA facilities. The SACLO/ADLO shall be the principal FAA representative at the planning conferences and shall be responsible for proper coordination between all parties concerned. The FAA SACLO/ADLO is the primary FAA official responsible for the coordination process for interceptor airspace. The air division airspace manager is responsible for interceptor negotiations during the coordination process. FAA facility participation at the conferences will be determined between FAA SACLO/ADLO and the region/s concerned. Appropriate FAA HQ Spectrum Engineering Office/regional Frequency Management personnel shall attend exercise planning conferences.

## **2-77 ESTABLISHMENT**

All ECM activity to be employed in a mission/exercise shall be coordinated with the appropriate FAA **Regional Frequency Management Office (FMO)**. Coordination must be effected prior to approval of the mission/exercise. The responsibility for coordination with the FAA **Regional FMO** rests with the military unit planning the ECM activity. Coordination with FAA HQ Spectrum **Policy and Management Division** will be completed through normal military command channels by the military service **frequency management office**. Final FAA authorization will be given in writing by HQ FAA. (Refer to FAA Order 7610.11.)

Delete

Delete

## **2-7-3 PARTICIPATION**

At the direction of Headquarters **ACC**, specified units will launch aircraft at selected intervals against pre-planned **NORAD areas**. The faker force will contain a large number of USSTRATCOM and other supplementary aircraft equipped with varied loads of electronic warfare equipment. In addition, interceptor aircraft from **air defense/air defense augmentation units** may be programmed to participate.

## **2-7-4 COORDINATION**

These exercises shall be coordinated by the military forces at conferences with affected FAA facilities. The **ACC Liaison Officer (ACCLO) and the Air Defense Liaison Officer (ADLO)** shall be the principal FAA representative at the planning conferences and shall be responsible for proper coordination between all parties concerned. The **ACCLO/ADLO** is the primary FAA official responsible for the coordination process for interceptor airspace. The air division airspace manager is responsible for interceptor negotiations during the coordination process. FAA facility participation at the conferences will be determined between FAA **ACCLO/ADLO** and the region(s) concerned. Appropriate frequency management personnel shall attend exercise planning conferences.

## **2-7-6 ESTABLISHMENT**

During the planning conference/s, ALTRV to be flown will be developed/designed to meet the military need in accordance with established procedures. When approving the low level segments of the ALTRV, every effort should be made to ensure adequate provisions for the normal requirements of other airspace users with respect to airports, control zones/extensions, approved instrument approach procedures, and airport traffic areas. Consideration should be given to traffic density, hours of operation, and other similar factors.

## 2-80 ECM CLEARANCE

Prior to initiating ECM, and after national level DOD and FAA approvals are given, all aircraft are required to obtain an ECM clearance from the NORAD facility having air defense jurisdiction over the airspace within which ECM is to be conducted or as outlined below. NORAD will, in turn, obtain final ECM clearance from the concerned ARTCC prior to the initiation of ECM activity.

Add

a. An open area has been determined as described below wherein the flight crews are not required to notify NORAD for an ECM clearance. In this area final approval shall be obtained directly by the flight crews from the appropriate ARTCC, after national level DOD and FAA approvals have been given.

b. The open area is defined as:

44°30'N/95°100'W to 42°00'N/92°00'W

to

the southern extremity of the CONUS ECM area and thence along the southern extremity of the CONUS ECM area to the Mexican/U.S. international boundary to 31°56'N/113°00'W

c. Upon request, ARTCC's shall notify Tyndall AFB NORAD SOCC of ECM activities affecting frequencies 375 MHZ through 475 MHZ, 1200-1400 MHZ, and 2700-2900 MHZ within the area bounded by 88°0'W longitude, 33°0'N latitude, 115°0'W longitude, the Mexican/U.S. international boundary and the southern extremity of the CONUS ECM area.

d. Upon request, ARTCC's shall notify 26th NORAD Region of ECM activities affecting frequencies 1200-1400 MHZ and 2700-2900 MHZ within the area bounded by 115°0'W longitude, 35°0'N latitude, 105°0'W longitude and the Mexican/U.S. international boundary.

## 2-81 SUSPENSION OF ECM

During the planning conference(s), ALTRV to be flown will be developed/designed to meet the military need in accordance with established procedures. When approving the low level segments of the ALTRV, every effort should be made to ensure adequate provisions for the normal requirements of other airspace users. Consideration should be given to traffic density, hours of operation, and other similar factors.

## 2-7-8 ECM CLEARANCE

Prior to initiating ECM, and after national level DOD and FAA approvals, flight crews are required to notify the appropriate NORAD ROCC/SOCC having jurisdiction over the airspace within which the ECM is to be conducted. This notification shall include the ECM authorization number. If unable to contact the appropriate NORAD facility directly, request the ARTCC/CERAP to pass the information to NORAD.

### NOTE-

ARTCC/CERAP's are the final approval authority for all ECM activity.

a. An open area has been determined as described below wherein the flight crews are not required to notify NORAD of ECM activity. Permission to conduct ECM in this area must still be obtained in accordance with procedures as outlined above.

b. The open area is defined as:

44°30'N/95°00'W to 42°00'N/92°00'W

to

the point of origin.

Delete

Delete

## 2-7-9 SUSPENSION OF ECM



Add

**REFERENCE-****FAAO 7110.65, CHAPTER 5, PARA 5-1-5, ECM/ECCM ACTIVITY**

Add

**a. Terminal facilities shall request suspension of ECM activity through the ARTCC/CERAP's.****4. OPERATIONAL IMPACT: None.****1. PARAGRAPH NUMBER AND TITLE: 3-1-2, Policy.****2. BACKGROUND:** Paragraph 3-1-2a, has been added to clarify CARF/ ARTCC/CERAP responsibility for ALTRV separation from other ALTRVs. Paragraph 3-1-6 defines altitude criteria for ALTRV's.**3. CHANGE:****OLD****NEW****3-2 POLICY****3-1-2 POLICY**

Add

**a. CARF or the appropriate ARTCC/CERAP (if the final approving agency) is responsible for separation of ALTRV mission from other ALTRV's after the aircraft have reached the first cruising altitude to a point where descent is started into the destination airport or where the ALTRV ends.****a.** ALTRV's shall be classified as either moving or stationary.

Relettered b.

**b.** A moving ALTRV will normally include the en route and arrival phases of flight up to and including the arrival holding pattern at which ATC provides separation between aircraft in accordance with FAAH 7110.65. CARF is responsible for separation of the mission from other ALTRV missions after the aircraft have reached the first cruising altitude to a point where descent is started into the destination airport or where the ALTRV ends.**1.** A moving ALTRV will normally include the en route and arrival phases of flight up to and including the arrival holding pattern at which ATC provides separation between aircraft in accordance with FAA Order 7110.65.**3-3 APPLICATION****3-1-3 APPLICATION****b.** ALTRV's may encompass certain nuclear tests, rocket, missile, and drone activities and other special operations as may be authorized by FAA approved procedures.**b.** ALTRV's may encompass rocket, missile, and RPV activities and other special operations.

Add

**f. An ALTRV approval does not constitute authorization for chaff or ECM activities. (FAAO 7110.11)****f.** Altitude reservations will not be approved for single aircraft missions unless the mission is Class One or Class Two. Single aircraft, which will join a tanker for refueling, will file an ALTRV to begin at the ARIP. The ALTRV will be terminated after the refueling is completed.**g. Single aircraft,** which will join a tanker for refueling, will file an ALTRV to begin at the ARIP. Normally the ALTRV will be terminated after the refueling is completed.**3-5 USER REQUIREMENTS****3-1-5 USER REQUIREMENTS****b.** Altitude utilization criteria must be flexible and adjusted as required. Seasonal traffic trends and revised civil and military jet inventories are factors which contribute for continued flexibility.

Move to 3-1-6

Add

**3-1-6 ALTITUDE CRITERIA**

Add

a. Altitude utilization criteria must be flexible and adjusted as required. Seasonal traffic trends and revised civil and military jet inventories are factors which necessitate flexibility.

Add

b. Due to pressure gradients, FL 180 will not normally be acceptable on an ALTRV except in oceanic airspace.

Add

c. The normal altitude block assignments for non-stream aircraft are:

1. Two aircraft refueling, two altitudes.

2. More than two aircraft, 500 feet per aircraft.

**NOTE-**

Flights of six or more aircraft should consider cell formations; thirty minutes between the cells

**4. OPERATIONAL IMPACT:** There is a clarification of separation responsibility for the final approving authority as well altitude criteria that must be considered for ALTRVs.

**1. PARAGRAPH NUMBER AND TITLE:** 3-2-1, Canadian and Overseas..

**2. BACKGROUND:** This change clarifies CARF responsibilities,

**3. CHANGE:**

**OLD****3-16 CANADIAN AND OVERSEAS**

Coordinate ALTRV requests as required for missions which depart from points within the CONUS, Hawaii and Guam with the appropriate overseas facilities (EU-CARF/PACMARF) or CARU.

Add

**NEW****3-2-1 CANADIAN AND OVERSEAS**

Coordinate ALTRV requests as required for missions which depart from points within the U.S. control area/flight information region (CTA/FIR) and penetrate another country's FIR with the appropriate international altitude reservation facilities.

**NOTE-**

Do not coordinate or approve classified missions which penetrate another CTA/FIR unless authorized by DOD. See paragraph 3-9-1b.

**3-17 CLEARANCE AUTHORITY**

Within the following limitations, CARF is authorized to approve an ALTRV in domestic control area without prior coordination with other ATC facilities:

a. Controlled airspace within the continental United States:

(1) At and above FL 240 west of the 100th west meridian.

(2) At and above 18,000 MSL east of the 100th west meridian.

**3-2-2 CLEARANCE AUTHORITY**

Delete

a. CARF is authorized to approve an ALTRV in the U.S. CTA/FIR:

1. FL 240 and above west of the 100th meridian.

2. 18,000 MSL and above east of the 100th meridian.

b. Controlled airspace within Alaska and Hawaii at and above FL 240.

b. CARF is the final approval authority for any ALTRV departing U.S. airspace which traverses, or penetrates airspace outside U.S. CTA/FIR.

### 3.18 AREAS WHERE COORDINATION IS NOT REQUIRED

Delete

CARF is responsible for the approval of an ALTRV in the following airspace without prior coordination with other ATC facilities:

Delete

a. Oceanic Control Areas-At and above FL 240: Anchorage, Guam, Honolulu, Houston, Miami, New York, Oakland, San Juan.

Delete

b. At and above FL 240 within the Bermuda Control Area.

Delete

### 3.19 ALTITUDE RESERVATION APPROVAL REQUEST

Add

a. CARF shall transmit any ALTRV APREQ to any non AUTODIN ARTCC concerned with the ALTRV mission.

**Note.** This includes aircraft departing a point in the U.S. on a DD-175 and beginning an ALTRV in Canadian Airspace.

### 3-2-3 ALTRV APPROVAL REQUEST (APREQ)

CARF shall:

a. Transmit all ALTRV APREQ's to the appropriate ARTCC/CERAP and CARU and list those facilities in Item "G" of the ALTRV APREQ per Section 9 of this chapter.

#### NOTE-

*This includes aircraft departing a point in the U.S. on a DD-175/1801 and beginning an ALTRV in Canadian Airspace.*

b. CARF shall transmit an ALTRV APREQ to the CARU for any mission which departs U.S. airspace and traverses Canadian airspace.

Add

b. Normally, CARF will transmit the APREQ to impacted ARTCC/CERAP's prior to issuing an approval.

c. When mission requirements or timeliness dictate, coordinate as needed by telephone, facsimile machine or other electronic means.

#### NOTE-

*The coordination requirement may be waived as needed to comply with Executive Order (EO) 11161 and EO 11382 or in an emergency.*

Add

d. Ensure PACMARF/EUCARF are addressed on the military ALTRV APREQ for any mission which departs U.S. airspace and traverses their countries' FIR's or penetrates traffic.

c. CARF shall advise all concerned ARTCC's of any change to the original ALTRV APREQ prior to issuing a final ALTRV APVL.

e. Advise all concerned ATC/international altitude reservation facilities and the project officer of any change to the original ALTRV APREQ prior to issuing a final ALTRV approval.

d. CARF shall process changes submitted by the project officer and ARTCC provided they are of an operational requirement.

### **3-20 ALTITUDE RESERVATION APPROVALS**

Add

a. Forward Altitude Reservation Approvals (ALTRV APVL) to all ARTCC's concerned at least 24 hours prior to the proposed departure time, unless a shorter time is coordinated with all ARTCC's concerned. If special instructions are required concerning the delivery of the APVL to the project officer, they are to be included in the ALTRV APVL message. Forward ALTRV APVL's to the following:

(1) Concerned ARTCC's.

(2) Foreign Air Traffic Facilities, as appropriate (EUCARF/PACMARF, CARU).

(3) thru (4)

(5) Message originator headquarters.

(6) Tanker support headquarters.

(7) As requested in item "G" of the ALTRV APREQ.

b. CARF shall provide the International Civil Aviation Organization (ICAO) location identifiers of the foreign and domestic control agencies concerned with the mission in Item G of the ALTRV APVL message.

Add

Add

c. Precede a No-Notice APVL message with "This is a (executing command) No-Notice Mission."

f. Process changes submitted by the project officer and ATC/international altitude reservation facilities provided they are of an operational requirement.

### **3-2-4 ALTRV APPROVAL (APVL)**

CARF shall be the final approval authority for any ALTRV departing a point within the U.S. CTA/FIR, except as provided for in paragraph 3-3-2. CARF shall:

a. Forward ALTRV APVL's to all concerned at least 24 hours prior to the proposed departure time, unless a shorter time is coordinated with all concerned ATC facilities. If special instructions are required concerning the delivery of the APVL to the project officer, they are to be included in the ALTRV APVL message. Forward ALTRV APVL's to the following:

1. Concerned ATC facilities.

2. International altitude reservation facilities, as appropriate.

Renumbered.

Delete

Delete

5. Other parties as requested in Item G of the ALTRV APREQ.

b. Provide the following information in Item G of the ALTRV APREQ:

1. The International Civil Aviation Organization (ICAO) location indicators of the international and domestic air traffic control facilities concerned with the mission.

2. Whenever the requested altitudes include uncontrolled airspace, include the phrase "NOTE ALTRV APVL VALID IN CONTROLLED AIRSPACE ONLY."

c. Precede a No-Notice ALTRV APVL message with "This is a (executing command) No-Notice Mission".

e. CARF shall be the final approving authority for any ALTRV departing a point within the CONUS or Hawaii and operating within the confines of paragraph 3-17.

Add

Add

e. Process the ALTRV in accordance with the above procedures and obtain APVL from facilities which about the U.S. CTA/FIR whenever the ALTRV is penetrating traffic.

### 3-2-5 NOTIFICATIONS

Disseminate ALTRV cancellations to all domestic and international air traffic control facilities concerned as soon as practicable. Forward departure information received from ATC facilities operating in a non-automated mode.

### 3 21 ALTRV CANCELLATIONS

Delete

Disseminate ALTRV cancellations to all domestic and foreign air traffic control agencies concerned.

### 3 24 FORMULATE NOTAM

CARF is responsible for the formulation and dissemination of appropriate Notices to Airmen (NOTAM's) for those ALTRV's which they have processed within CARF's area of jurisdiction. This responsibility may be assigned to the FAA Liaison Officer upon his request.

### 3-2-8 FORMULATE ALTITUDE RESERVATION NOTICE TO AIRMEN (NOTAM)

CARF is responsible for the formulation of Altitude Reservation NOTAM's for those ALTRV's for which they are the final approval authority. For those areas outside U.S. airspace CARF will state: ADDITIONAL AREA FOR INFORMATION ONLY.

### 3 26 MESSAGES CLASSIFIED AS "EFTO"

Handle all ALTRV messages exchanged between CARF and ARTCC, which are classified as Encrypt for Transmission Only (EFTO), via the Defense Communications System (DCS). EFTO messages cannot be transmitted to foreign air traffic facilities or non AUTODIN ARTCC's.

### 3-2-10 MESSAGES CLASSIFIED AS "EFTO"

Handle all ALTRV messages exchanged between CARF and ATC facilities, which are classified as Encrypt for Transmission Only (EFTO), via DSN. EFTO messages cannot be transmitted to international altitude reservation facilities.

**4. OPERATIONAL IMPACT:** The change details the notification process for CARF. This may require updating checklists and providing briefings to personnel.

---

**1. PARAGRAPH NUMBER AND TITLE:** 3-3-1, APREQ Review and Coordination.

**2. BACKGROUND:** This change reorganizes the section for ease of use and adds the requirement to update the Trusted Agent listing for Centers and CERAP's. This change reorganizes the section for ease of use and adds the requirement to update the Trusted Agent listing for Centers and CERAP's.

**3. CHANGE:**

### 3 31 APREQ REVIEW

Add

### 3-3-1 APREQ REVIEW AND COORDINATION

b. Coordinate with the approach control facility when the ALTRV will operate within airspace delegated to approach control or other ATC facilities. This coordination should include departure procedures.

Add

c. Ensure that the flight has been approved up to the first cruising altitude requested, provided that the first altitude will be attained within the originating ATC facilities area or the first adjacent ATC facility's area. This coordination includes those ATC facilities to which you have delegated airspace, unless otherwise covered in a letter of agreement with CARE.

### 3 32 COORDINATE DEPARTURE PROCEDURES

Coordinate departure procedures with appropriate approach control facilities regardless of the classification of the mission.

Delete

Combined in 3-3-1a

### 3 33 APPROVAL OF FLIGHT

Delete

Add

#### 3-3-2 ARTCC/CERAP APPROVED ALTRV's

Where practical and advantageous, an ARTCC/CERAP may be the final approval authority for an ALTRV when the entire route of flight and associated protected airspace will not involve more than two ARTCC/CERAP's area of control jurisdiction. The ARTCC/CERAP shall:

Add

a. Assume the ALTRV APREQ responsibilities outlined in paragraphs 3-2-3 a, c, and d.

Add

b. Assume the ALTRV APVL responsibilities outlined in paragraphs 3-2-4 a through d.

#### NOTE-

ARTCC/CERAP's are not authorized to approve ALTRV's whose route of flight or protected airspace are not wholly contained within the U.S. CTA/FIR (see paragraph 3-2-1).

### 3 35 DELIVERY INSTRUCTIONS

Deliver all ALTRV APVL's and amendments to the designated project officer in accordance with delivery instructions contained in the ALTRV APVL message. Comply with the security restrictions contained in the APVL message regarding release time to military personnel, ETD, etc.

#### 3-3-4 DELIVERY INSTRUCTIONS

When an ARTCC/CERAP is the final approval authority, deliver all ALTRV APVL's and amendments to the designated project officer in accordance with delivery instructions contained in the ALTRV APREQ message. Comply with the security restrictions contained in the APREQ message regarding release time to military personnel, ETD, etc.

### 3 36 FLIGHT PROGRESS STRIPS

Prepare flight progress strips and other data to display the required information on mission aircraft utilizing an ALTRV.

#### 3-3-5 FLIGHT PROGRESS STRIPS

Prepare flight progress strips and other data in accordance with FAA Orders 7110.65 and 7210.3 to display the required information on mission aircraft utilizing an ALTRV.

Note.-See procedures outlined in FAA Order 7210.3.

Delete

### 3 37 NOTIFY APPROACH CONTROL FACILITIES

Delete

Regardless of classification of mission, notify appropriate approach control facilities of approved ALTRV's which will operate within airspace delegated to approach control.

Combined in 3-3-1a

### 3 38 CANCELLATION NOTIFICATIONS

#### 3-3-6 NOTIFICATION

a. Forward departure times and/or cancellation of ALTRV aircraft to CARF, CARU, and all concerned foreign and domestic air traffic control facilities. Departure messages shall include the departure time and identification of the following:

b. Forward cancellations of ALTRV aircraft and other ALTRV changes to CARF, CARU, and appropriate domestic and foreign ARTCC's and approach control facilities.

a. Forward departure times of ALTRV aircraft to the ALTRV approval authority. Departure messages shall include the departure time and identification of the following:

b. Forward cancellations of ALTRV aircraft and other ALTRV changes to CARF and appropriate approach control facilities. This applies to cancellations of individual aircraft within the ALTRV or the whole mission. CARF will forward the information to the appropriate ATC and international reservation facilities.

### **3 39 ALTRV NOT IN CARF'S AREA OF JURISDICTION**

Where practical and advantageous, process ALTRV APREQ's when the entire route of flight is out of CARF's area of jurisdiction (see paragraph 3 17) and will not involve more than two ARTCC's advisory areas.

### **3 42 ALTRV ROUTING AND ALTITUDE CHANGES**

Routing and altitude/s of aircraft established on an approved ALTRV shall not be changed except in the interest of safety of flight or as specified below:

Add

Add

c. Multiple aircraft in an ALTRV are responsible for their own separation (MARSAs) from the initiation of the ALTRV until the termination or cancellation of the ALTRV. Controller assigned course or altitude changes will void MARSAs. The ARTCC is responsible for confirming reestablishment of MARSAs if the aircraft route or altitude is changed from the approved ALTRV.

Add

Delete

Combined in 3-3-2

### **3-3-9 CHANGES TO ALTRV ROUTING AND ALTITUDE**

No change

#### **NOTE-**

An ALTRV APVL authorizes the aircraft to climb or descend as specified. Controllers are not required to issue a climb or descent clearance for the various flight segments. They may, however, request that the pilot advise them prior to initiating an altitude change.

b. Short-term adjustments to altitude or course of single aircraft (or standard formation) on an ALTRV may be issued with the concurrence of the aircraft (flight) commander in order to expedite overall traffic flow as long as the controller assures return of the aircraft, to the ALTRV, within their sector or within sectors with which the adjustment and return are directly coordinated.

Combined in c and d

c. If ARTCC/CERAP initiates changes to the ALTRV due to safety or other extraordinary circumstances, MARSAs, if applicable, is suspended and the ARTCC/CERAP assumes responsibility for separation. The ARTCC/CERAP is also responsible to return the aircraft to the ALTRV as soon as practicable.

Add

**NOTE-**

**Due to critical military operational requirements: e.g., timing, refueling, locations, etc., which necessitated the ALTRV, changes shall be kept to the absolute minimum required for safety.**

**d. Multiple cells in an ALTRV are responsible for their own separation (MARSA) from the initiation of the ALTRV until the termination or cancellation of the ALTRV.**

**1. Controller assigned course or altitude changes without the concurrence of the formation flight leader will void MARSA.**

**2. The ARTCC/CERAP is responsible for returning the cell to the ALTRV as soon as practical and confirm re-establishment of MARSA between cells.**

**4. OPERATIONAL IMPACT:** The changes are editorial and rearranging paragraphs for clarity. There is the additional requirement for ARTCC and CERAP's to update the Trusted Agent listing annually by March 1 or as needed.

---

**1. PARAGRAPH NUMBER AND TITLE:** 3-4-1, Resolving Mission Conflicts.

**2. BACKGROUND:** This change deletes requirements for number of aircraft in a class 3 and 8 Missions and reduces the number on minutes for non-radar en-route fix estimates.

**3. CHANGE:**

**OLD****3-44 RESOLVING MISSION CONFLICTS**

During periods other than when the provisions of the SCATANA Plan are invoked, an Order of Precedence (paragraph 3 45) shall be applied to all requests for ALTRV's for the purpose of resolving conflicts. Airspace assigned by ATC for the conduct of interceptor activity shall be provided the same order of precedence class number as that applied to the ALTRV associated with the exercise or mission.

**b. Missions assigned Class Three through Seven shall consist of a minimum of two aircraft.**

**c. Missions assigned Class Eight shall consist of a minimum of three aircraft.**

**d. The criteria in subparagraphs b or c above are not applicable to the departure routes of the ALTRV.**

**3-45 ORDER OF PRECEDENCE****NEW****3-4-1 RESOLVING MISSION CONFLICTS**

During periods other than when the provisions of the SCATANA Plan are invoked, an Order of Precedence shall be applied to all requests for ALTRV's for the purpose of resolving conflicts. Airspace assigned by ATC for the conduct of interceptor activity shall be provided the same order of precedence class number as that applied to the ALTRV associated with the exercise or mission.

Delete

Delete

Delete

**3-4-2 ORDER OF PRECEDENCE**



**c.(3)** Class Three - Aircraft engaged in emergency air evacuation, hurricane operations, or other operations involving safety of lives or property; i.e., use of airlift forces as directed by appropriate authority in support of domestic crises. ALTRV APREQ should be filed as far ahead of takeoff as practicable.

### **3-49 EN ROUTE TIMING**

Aircraft shall advise ATC if actual fix timing will be more than plus or minus 10 minutes from the planned ALTRV en route fix estimate.

**c3.** Class Three - Aircraft engaged in emergency air evacuation, hurricane operations, WX RECON, or other operations involving safety of lives or property; i.e., use of airlift forces as directed by appropriate authority in support of domestic crises. ALTRV APREQ should be filed as far ahead of takeoff as practicable.

### **3-4-6 EN ROUTE TIMING**

In a non-radar environment, the pilot shall advise ATC if actual fix timing will be more than plus or minus 5 minutes from the planned ALTRV en route fix estimate.

## **4. OPERATIONAL IMPACT: None.**

### **1. PARAGRAPH NUMBER AND TITLE: 3-5-4, Project Officer.**

**2. BACKGROUND:** This change provides clarification of CARF, ARTCC/CERAP and Project Officers responsibilities as well as reorganize the section for ease of use.

### **3. CHANGE:**

#### **OLD**

#### **3-54 PROJECT OFFICER**

Originating units shall assign a project officer and an alternate project officer for each proposed ALTRV APREQ. These project officers are expected to be thoroughly familiar with the requirements set forth in this Chapter.

#### **NEW**

#### **3-5-4 PROJECT OFFICER**

The originator of the ALTRV request shall assign a project officer and an alternate project officer for each proposed ALTRV APREQ. These project officers shall be thoroughly familiar with the requirements set forth in this chapter and available for coordination until the ALTRV mission departure. DSN and commercial phone numbers shall be specified in Item G of the ALTRV APREQ in accordance with paragraph 3-9-2h2 and 3.

**a(4)** The appropriate FAA Liaison Officer; i.e., SA-CLO, TACLO, or ADLO.

**b.** It shall be the responsibility of the project officer to ensure receipt of the approval for subparagraph a.

Add

**a4.** The appropriate FAA Liaison Officer.

**b.** It shall be the responsibility of the project officer to ensure receipt of the approvals specified in subparagraph a.

**c. The project officer shall ensure that the ALTRV APVL and any subsequent amendments are coordinated with the aircrews.**

**c.** In addition to the items listed in Section 9, of this Chapter, the following information shall be included in the remarks section of the ALTRV APREQ:

**(1)** The name of the ARTCC's with which coordination has been effected.

**(2)** ECM and chaff information to the extent possible.

**d.** In addition to the items listed in Section 9, of this chapter, the following information shall be included in the remarks section, Item G, of the ALTRV APREQ:

**1. ARTCC/CERAP's in which ALTRV is flight planned.**

**2. ECM and chaff information, including chaff authorization number, if applicable. (see paragraph 3-1-3f.)**

(4) All airspace for which approval has been obtained.

d. It shall be the responsibility of the originating unit and the project officer to ensure that ALTRV APREQ's are submitted so as to reach CARF not later than the time criteria specified in paragraph 3 45. Proposed departure times of No-Notice missions shall be included. All mission aircraft shall be included in the ALTRV APREQ's. This includes but is not limited to airborne command post aircraft, weather reconnaissance aircraft, or other aircraft as deemed necessary by coordination between CARF and the project officer.

j. The project officer shall insure that any changes to the mission are coordinated with the proper ALTRV coordinating authority and air crews.

### 3 55 OPERATIONS INVOLVING MORE THAN TWO ARTCC'S

When the ALTRV APREQ concerns operation in airspace other than that specified in paragraph 3 17 and will involve more than two ARTCC areas, it shall be submitted to CARF in accordance with paragraph 3 54d.

### 3 56 ARTCC FLIGHT ADVISORY AREAS/ OCEANIC CONTROL AREAS

### 3 57 NO-NOTICE NOPAR MISSION

b(2) The project officer shall specify "NOPAR" in the remarks sections of an ALTRV APREQ when mission information is to be withheld from all air defense radar facilities. When mission information is to be withheld only from specific defense radar facilities and/or fighter interceptor squadrons, the facilities and/or squadrons shall be added to the ALTRV APREQ immediately after "NOPAR."

### 4. OPERATIONAL IMPACT: None.

4. All special use airspace and ATC assigned airspace (ATCAA) for which approval has been obtained.

e. It shall be the responsibility of the originator and the project officer to ensure that ALTRV APREQ's are submitted so as to reach CARF not later than the time criteria specified in paragraph 3-4-2. Proposed departure times of No-Notice missions shall be included. All mission aircraft, and other aircraft as deemed necessary by coordination between CARF and the project officer, shall be included in the ALTRV APREQ's.

Delete

### 3-5-5 ALTRV's ENTERING U.S. CTA/FIR

Military command headquarters located outside U.S. CTA/FIR proposing to conduct an exercise that will encompass activities within the U.S. CTA/FIR should effect coordination with CARF.

Delete

### 3-5-6 NO-NOTICE AND/OR DO NOT PASS TO AIR DEFENSE RADAR (NOPAR) MISSION

b2. The project officer shall specify "NOPAR" in the remarks sections of an ALTRV APREQ when mission information is to be withheld from all air defense radar facilities and fighter interceptor squadrons. When mission information is to be withheld only from specific air defense radar facilities and/or fighter interceptor squadrons, the facilities and/or squadrons shall be added to the ALTRV APREQ immediately after "NOPAR."

1. **PARAGRAPH NUMBER AND TITLE:** 3-6-1, Planning/Approval of APREQ's.

2. **BACKGROUND:** This change reorganizes the section for ease of use.

3. **CHANGE:**

**OLD****3-61 PLANNING/APPROVAL OF APREQ'S**

b. Lateral-Standard minima specified for the area of operation. When a mission requires operation on a broad frontal width, 7110.65 separation shall be provided between the outer limits of such flight or formation and other flights.

**3-6-2 MARSA**

During the planning and approval phase of an ALTRV when less than the separation in paragraph 3 61 exists, MARSA shall apply.

b. When MARSA is applied between missions of different nicknames, it shall be included in the remarks section of the flight plan identifying the ALTRV and the area within which separation responsibility is accepted.

**3-64 POSITION REPORTS**

a. The first and last aircraft in a stream formation shall make position reports at each required reporting point and shall indicate position in the formation.

**4. OPERATIONAL IMPACT: None.****NEW****3-6-1 PLANNING/APPROVAL OF APREQ'S**

b. Lateral - Standard minima specified for the area of operation. When a mission requires operation on a broad frontal width, separation shall be provided in accordance with FAAO 7110.65 between the outer limits of such flight or formation and nonparticipating aircraft.

**3-6-2 MARSA**

When less than the separation in paragraph 3-6-1 exists, MARSA shall apply as follows:

b. When MARSA is applied between missions of different mission names, include a statement in the remarks section of the flight plan and ALTRV APREQ that include the name(s) of the missions within which separation responsibility is accepted.

**3-6-4 POSITION REPORTS**

a. In a non-radar environment or when requested by the controller, the first and last aircraft in a stream formation shall make position reports at each required reporting point and shall indicate position in the formation.

**1. PARAGRAPH NUMBER AND TITLE: 3-8-1, Criteria.**

2. **BACKGROUND:** This change provides updated examples of moving and stationary ALTRV's.

**3. CHANGE:****OLD****3-81 CRITERIA**

a. NOTAM's shall be issued for stationary reservations.

Add

Add

b. NOTAM's shall be issued on moving reservations where it is determined that a portion of the ALTRV would adversely affect the planning or operation of other aircraft.

**NEW****3 -8-1 CRITERIA**

a. Issue an altitude reservation NOTAM for:

1. All Stationary Altitude Reservations.

**NOTE-**

CARF, ARTCC, or CERAP (whoever is the final approval authority) shall issue the NOTAM.

Delete

Add

**2. Selected moving Altitude Reservations, whenever a portion of the ALTRV includes air refueling and/or other unusual activity below FL 180, or when the activity covers a broad frontal width.**

c. NOTAM's shall describe the area which is in use and the duration of the ALTRV. Reference shall not be made to the type of activity within the ALTRV unless the originator has agreed to the publication of this information.

**b. Describe the area** which is in use and the duration of the ALTRV. Reference shall not be made to the type of activity within the ALTRV unless the originator has agreed to the publication of this information.

Add

**EXAMPLE-**  
**ZNY CARF NR. 270 ON GOLF ONE STATIONARY RESERVATION WITHIN A 100 NM RADIUS OF 3700N 4500W SFC-FL270 WEF 9703231500-9703231700.**

### 3 82 FORMULATION AND DISSEMINATION

a. CARF is responsible for the formulation and dissemination of appropriate NOTAM's for those ALTRV's which they have processed. This responsibility may be assigned to the FAA Liaison Officer upon his request.

### 3-8-2 FORMULATION AND DISSEMINATION

**a. The final approval authority, CARF or the appropriate ARTCC/CERAP, is responsible for the formulation and dissemination of appropriate NOTAM's for those ALTRV's which they have approved in their area of jurisdiction.**

b. ARTCC's are responsible for the formulation and dissemination of appropriate NOTAM information for ALTRV's they have processed outside of CARF's area of jurisdiction in which CARF was not involved.

Combined in para a.

c. Coordination shall be effected between adjacent ARTCC's if it will permit consolidation of NOTAM information as prescribed above for the issuance of a joint NOTAM.

Relettered b.

d. NOTAM's shall not be issued under the following conditions:

**c. Altitude reservation** NOTAM's shall not be issued under the following conditions:

(d) Unclassified EFTO.

Delete

**(e) Unclassified EFTO Mission Traffic**

Delete

(2) The mission is a No-Notice mission, except that appropriate NOTAM's may be issued after specific instructions have been received from the originator of the mission.

2. The mission is a No-Notice mission, except that appropriate **altitude reservation** NOTAM's may be issued after specific instructions have been received from the originator of the mission.

4. OPERATIONAL IMPACT: None.

---

1. PARAGRAPH NUMBER AND TITLE: 3-1-9, ALTRV APREQ's.

2. BACKGROUND: This change amends the title of section 9 and provides updated examples as formatting ALTRV APREQ's and amendments.

3. CHANGE:

**OLD****3-91 ALTRV APREQ'S**

a. Whenever possible, send ALTRV APREQ's unclassified.

(1) If sent classified or EFTO, advise earliest time message may be declassified or EFTO may be dropped; i.e., 24 hours prior to departure, upon departure, etc.

(2) Classified or EFTO missions cannot be coordinated with foreign ICAO centers or agencies.

**3-92 FORMAT**

Thru **b.Example**

Add

Add

**NEW****3-9-1 ALTRV APREQ's**

a. Whenever possible, ALTRV APREQ's should be sent unclassified.

b. If sent classified or EFTO, advise CARF of the earliest time the message may be declassified or EFTO may be dropped; i.e., 24 hours prior to departure, upon departure, etc. Classified or EFTO missions cannot be coordinated with international facilities or agencies unless written permission is given by the unit or command that files the APREQ. Advise CARF of the earliest declassification time in item G of APREQ.

**3-9-2 FORMAT**

Delete

In order to accomplish timely data processing by the CARF automated system, ALTRV APREQ's must be properly formatted prior to submission to CARF, or other approval authority, utilizing key phrases outlined in this paragraph and Section 10, Flight Path Format Components. Indicate the following items on all ALTRV APREQ messages:

**NOTE-**

N/A may be used in a stationary ALTRV for items A thru C and E thru F, when applicable.

a. Heading: "ALTRV APREQ," the mission name, and a slash "/" followed by the mission class. ALTRV APREQ's filed in support of another ALTRV shall file the same mission name and mission class, followed by the word "SUPPORT."

**EXAMPLE-**

ALTRV APREQ CORONET WEST 450A/7

ALTRV APREQ FULL UP 95 4/8

ALTRV APREQ FILL UP 95 4/8 SUPPORT

Add

b. Item A, Call Sign(s): "A" followed by the call sign(s) of all aircraft which will depart together from the location specified in item C. Call signs shall not exceed seven alphanumeric characters in length; the tactical call sign is a pronounceable word of 3 to 6 alphabetical characters followed by a 4, 3, 2, or 1 digit number. When there are multiple flights with the same tactical call sign, combine the numbers portion by separating consecutive series with a dash and individual numbers with a comma.

NOTE-

Do not include the call signs of aircraft which file individual flight plans to join the ALTRV en route. These will be noted in the item "D" or "G."

EXAMPLES-

A. BONE11-13

(This indicates BONE11, BONE12 and BONE13).

A. Happy32,34

(This indicates HAPPY32 and HAPPY34).

A. PINE80,81 MOOSE31-33

(This indicates PINE80, PINE81, MOOSE 31, MOOSE32, MOOSE33).

Add

c. Item B, Number and Type of Aircraft: "B" followed by the number of aircraft if more than one; heavy indicator "H" if appropriate, type of aircraft, and equipment suffix code. The items should be specified in the same order that the call signs appear in Item A and the number of aircraft should agree with the number of call signs.

EXAMPLE-

B. 3HB52/R

(3 is the number of aircraft, H indicates heavy, B52 is the type of aircraft, and R is the equipment suffix code).

d. Item C, Point of Departure: "C" followed by the four-letter ICAO location identifier. When the point of departure is classified, indicate "ZZZZ." Do not include the departure point of aircraft that file individual flight plans which join the ALTRV en route.

EXAMPLE-

C. KIAX

C. PANC

Add

e. Item D, Route of Flight, Elapse Times, and Altitudes - "D" followed by the route of flight, elapsed times between segments on the routes, and the altitude to be flown for each segment. (Fix-Time-Event sequence)

1. Route of Flight: The route of flight will include events or actions within the route and may be composed of any number of flight paths as defined in Section 10, Flight Path Format Components. Route of flight for operations above FL 180 should be defined in relation to established high altitude navigation aids only. The route of flight segment for a stationary ALTRV shall adhere to the guidelines outlined in paragraph 3-10-4a-e.

NOTE -

When tanker aircraft do not depart with the ALTRV but join up at a later point, provide the following information, at the point at which they join the ALTRV: "JOIN;" the call sign; the number, type and equipment suffix, as in c. above: "IFPFP;" and the point of departure.

EXAMPLE-

JOIN JOE 53 KC10/R IFPFP PHIK

2. Elapse times: Times should be specified in four digits which express hours and minutes. Indicate cumulative time elapsed in one of the following manners:

(a) When timing begins upon departure, from the point of departure.

EXAMPLES-

0012 (This indicates 12 minutes from the time of departure).

0509 (This indicates 5 hours and 9 minutes from the time of departure).

(b) When timing begins over the first fix of a partial route, indicate the beginning point as the first fix in Item D, with the elapse time of "0000."

NOTE -

See paragraph 3-9-2 g, for associated language require in Item F., Departure Information.

EXAMPLE-

((PR FL250 DKB 090/025 0000 ALTRV BEGINS

3. Altitudes: Indicate the altitude in three digits expressed in hundreds of feet; "SURFACE" may be used to indicate altitudes which extend from the surface of controlled airspace. Precede the altitude with "FL" for altitudes of 18,000 feet or above. Insert "B" between the lower and upper limits of a block altitude.

NOTE-

Flight levels may be used in oceanic airspace below 18,000 feet if required to set altimeter to 29.92

EXAMPLES-

090 (indicates 9,000 feet)

FL 190 (indicates 19,000 feet)

FL 230B250 (indicates block altitudes of 23,000 feet through 25,000 feet).

Add

f. Item E. Destination: "E" followed by the four-letter ICAO location identifier and the cumulative elapsed time (optional) to the destination, expressed as in paragraph e2.

1. When all aircraft proceed to the same destination, no additional information is needed.

2. When there are multiple destinations, specify the call sign and location identifier for the destination for all aircraft that remain in ALTRV at ALTRV end point as follows:

(a) Call sign.

(b) Location identifier for the destination.

(c) Elapsed time. (Optional)

3. When the destination is classified, indicate "ZZZZ"; no elapsed time should be shown.

EXAMPLES-

E PHNL 0405

E. CLAN80,81 PHNL ZESTY12 PHNG

E. ZZZZ

Add

g. Item F. Departure Information: "F" followed by "ETD" and:

1. When timing begins upon departure, the date time group of the estimated time of departure.



(a) If a single group is departing, indicate the day of the month and UTC time, expressed in six digits, and the month and year of departure.

(b) If more than one group is departing, indicate the call sign for each group, in the order of departure, followed by the date time group.

(1.) For the first group, specify the date time group as in a., above.

(2.) For successive groups, indicate only the day of the month and UTC time, expressed in six digits.

2. When timing begins over the first fix of a partial route, the phrase "ALTRV BEGINS OVER (fix) AT", followed by the date time group, as specified in (1), above.

EXAMPLE-

ETD ALTRV BEGINS OVER DKB 090/025 AT  
161815 MAY 1996

3. Interval Between Aircraft (ADMIS) - The ADMIS should be specified for any group of more than one aircraft. Indicate one of the following:

(a) "ADMIS" followed by two digits which indicate the number of minutes between departing aircraft in the group.

(b) "ADMIS" followed by two digits and "SEC" to indicate the number of seconds between departing aircraft in the group.

(c) "FRMN" to indicate that departing aircraft are considered as one and will depart in less than 30 second intervals.

4. AVANA Time "AVANA" followed by the date time group, expressed in six digits.

EXAMPLE-

F. ETD 020030 JAN 1997 AVANA 020130

F. ETD BONE11-16 020030 JAN 1997

ADMIS 30 SEC

BONE17,18 020100 FRMN

BONE19 020130 AVANA 020230

Add

h. Item G, Remarks: "G" followed by:

1. "TAS." Include the airspeed in three digits and "KTS." Indicate if cruise and air refueling speed are different.

**2. "PROJECT OFFICER."** Include the name, grade, DSN, and commercial phone numbers of the project officer.

**3. "ALTERNATE PROJECT OFFICER."** Include the name, grade, DSN, and commercial phone numbers of the alternate project officer.

**4. "ADDITIONAL INFORMATION."** Include any remarks pertaining to the execution of the mission; i.e., MARSA, NOPAR, ECM activity, IFPP routings, etc.

**NOTE-**

*A MARSA statement must be included if the aircraft will fly less than standard separation.*

**5. "ARTCC."** List the names of all ATC facilities which will be concerned with the ALTRV.

**6. "REQUEST COPY OF ALTRV APVL BE SENT TO."** (Optional) List any additional parties that need a copy of the ALTRV APREQ. (see paragraph 3-2-4a.)

**EXAMPLE-**

G. TAS: 430KTS CRUISE/AIRFL

G. TAS: 440KTS CRUISE 410KTS AIRFL

PROJECT OFFICER: CAPT PAUL DSN 555-5555/COMM (111) 555-1111

ALTERNATE PROJECT OFFICER: CAPT BART-KO DSN 555-5556/COMM (111) 555-222

ADDITIONAL INFORMATION: MARSA ALL BUSY LEADER OSCAR AIRCRAFT.

ARTCC CONCERNED: ZNY ZDC CARU EU-CARF REQUEST COPY OF ALTRV APVL BE SENT TO 438MAW MCGUIRE AFB NJ//DO

### 3-93 ALTRV AMENDMENTS

When making amendments to ALTRVs, include mission name and estimated time of departure.

Add

Add

### 3-9-3 ALTRV APREQ AMENDMENTS

When necessary to amend an ALTRV APREQ, indicate the following:

a. Heading: "amendment to" followed by the heading information as specified in the original APREQ.

b. Date Time Group: "ROMES" (Reference our message) followed by the date time group of the original APREQ message.

Add c. Estimate Time of Departure: "ETD" followed by the date time group specified in Item F on the original APREQ.

Add d. Amendment(s): "AMEND" followed by the item(s) to be amended and the amendment; indicate the specific item on the original APREQ, such as Item A, Item B, etc.

Add e. Ending: "ALL ELSE REMAINS THE SAME."

EXAMPLE-  
AMENDMENT TO ALTRV APREQ SHARP-  
SHOOTER95-1/8  
ROMES 111012 ETD 191500 FEB 1997  
AMEND ITEM A AND B  
ITEM A RAVEN01-07  
ITEM B 7EF111/R  
ALL ELSE REMAINS THE SAME

**4. OPERATIONAL IMPACT:** There are changes in requirements for the CARF automated system. The ALTRV APREQ's format will need review.

---

**1. PARAGRAPH NUMBER AND TITLE:** 3-10-1, Introduction.

**2. BACKGROUND:** This change reorganized the section for ease of use, changed the section title, updates flight path components and provides examples of properly formatted ALTRV APREQ's.

**3. CHANGE:**

#### OLD

#### **3 101 INTRODUCTION**

This section contains detailed and specific instructions for the proper format of an ALTRV APREQ prior to submission to CARF and supplements paragraph 3 92. Key phrases must be used to accomplish timely data processing by the CARF automated system. Key phrases and their usage are contained in paragraph 3 92 and paragraph 3 105 of the order.

Add

#### NEW

#### **3-10-1 INTRODUCTION**

This section supplements paragraph 3-9-2. It contains detailed instructions on the format of flight path components and provides examples of properly formatted ALTRV APREQ's.

#### **3-10-2 DEFINITION**

A flight path is defined as a consecutively listed set of fix/time/event groups in which the fixes in the set will be successively overflowed. A route of flight may be composed of any number of flight paths; aircraft may merge or separate at various points along the route of flight.

**3-10-3 FORMAT**

Flight paths are separated by the phrases defined in paragraph 3-10-4 which begin and/or end events along the route. The repetition of previously listed fixes is to be avoided. When flight paths merge or separate, the last fix listed in a flight path should be the point of merger or separation. Accordingly, the first fix listed in a flight path should not repeat the point of merger or separation.

Add

a. Fixes should be used in one of the following formats:

1. A two to five letter NAVAID identifier, location identifier, or fix name.

EXAMPLES-

DB Burwash NDB

OKC Oklahoma City VORTAC

KNTU NAS Oceana

DENNS The fix DENNS

2. A fix/radial/distance; specify the NAVAID, the radial in degrees magnetic, a slash "/" and the distance in nautical miles, expressed in three digits.

EXAMPLE-

RDF 070/040 (This indicates 40 NM DME on the 70 degree radial of the RDF NAVAID).

3. A latitude/longitude expressed in degrees and minutes with the appropriate "N," "S," "E," "W" suffix.

NOTE-

Normally, fix/radial/distance shall be utilized for fixes over the conterminous U.S. and latitude/longitude shall be used for tracks flown over oceanic or Canadian airspace unless there is a published fix available.

EXAMPLE-

3030N 17500W (This indicates 30 degrees 30 minutes north latitude, 175 degrees west longitude).

Add

b. Altitudes should be in one of the following formats:

1. Below 18,000 feet - expressed in hundreds of feet.

**NOTE-**

Flight levels may be used in oceanic airspace below 18,000 feet if required to set altimeter to 29.92.

2. Flight levels - "FL" followed by the three digits of the altitude/flight level (18,000 feet and above).

3. Block or range of altitudes:

(a) Below 18,000 feet - the lower limit, "B," then the upper limit expressed in hundreds of feet.

(b) Flight levels - "FL," the lower limit, "B," and the upper limit expressed in three digits of altitude/flight level.

**NOTE-**

When using two or more altitudes, the base altitude should be the correct altitude for the direction of flight.

**EXAMPLE-**

110            11,000 feet  
FL210        Flight level 210 (21,000 feet)  
FL210B250   FL210 through FL250

Add

c. Airways should be in one of the following formats:

1. Victor airways - "V" followed by the one, two or three digit number of the airway.

2. Jet routes - "J" followed by the one, two or three digit number of the route.

**3-104 ITEM C-DEPARTURE POINT**

Delete

The four-letter ICAO identifier will be used for this item. (See Table 3 104)

Table 3 104.-Four-letter ICAO Identifier Usage

"KJAX" The first letter, K, indicates the country or region of origin; the last three letters, JAX, indicates the departure point.

Add

**3-10-4 COMPONENTS**

The following phrases are to be used in Item D when filing an ALTRV APREQ. Unless otherwise noted, these phrases refer to events that occur immediately "following" the specified fix/time. The exceptions are LVLOF BY, cross events and the begin partial route statement. Only certain listed phrases are known to the CARF computer system. Any use of non-standard phrases in Item D, unless contained within brackets [], will prevent timely processing of the ALTRV. The use of brackets for non-standard phrases will cause the CARF computer to skip over the phrase and not utilize it for plotting or conflict detection. As used in this order, the phrases set forth below shall have the meaning indicated.

Add

a. ACCELERATE TO SUPERSONIC. Supersonic speed will commence at the fix/time which precedes this phrase. (See End Supersonic)

EXAMPLE-

BOS 0200 ACCELERATE TO SUPERSONIC

Add

b. AIRFL BEGINS or BEGIN AIRFL. Point at which air refueling begins.

EXAMPLES-

YUZ 0025 AIRFL BEGINS

PLB 216/053 BEGIN AIRFL

Add

c. AIRFL ENDS OR END AIRFL. Point at which air refueling ends.

EXAMPLES-

LMN 0139 AIRFL ENDS

SAV 0212 END AIRFL

Add

d. ARCP. Point at which receiver arrives in the observation/refueling position with respect to the assigned tanker.

EXAMPLE-

RZS 0029 ARCP

Add

e. ARIP. Point at which the receiver enters the refueling track, initiates radio contact with the tanker, and begins maneuver to join up.

EXAMPLE-

RZS 0019 ARIP

Add

f. BEGIN ALT DPRT RTE or ((AR. - Specifies two or more alternate routes from the point of departure. This should either be the first phrase of Item D or immediately follow a previous alternate departure route. The phrase should be followed by:

1. Alternate departure route description enclosed in square brackets "[ ]."

2. Call signs of the aircraft which will utilize the route; this may be omitted if the route will be used by all of the aircraft specified in Item A.

3. Altitude.

EXAMPLES-

BEGIN ALT DPRT RTE [OPTIMUM SOUTH RUNWAY] FL210B230

((AR [CALDI SIDOR] BONE13-19 FL220B240

((AR [NORTH DEPARTURE] BONE13-19 FL190B210

((AR [SOUTH DEPARTURE] BONE13-19 FL190B210

Add

g. BEGIN BRANCH RTE or ((BR. A track of an ALTRV that is defined from the breakaway point from a common route to the next fix or final destination. The phrase should be followed by:

1. Call signs of aircraft which will utilize this route.

2. Altitude, if the point of separation is the departure point.

3. DPRT ORBIT AT (time) if aircraft separate at an orbital point ("AT" is optional); or EXIT STATIONARY RESERVATION AT (fix/time) or EXIT MANEUVERING AREA AT (fix/time) if aircraft separate upon exiting a stationary reservation.

4. FROM (fix) indicates the point at which aircraft taking the branch route separate from the main body; the phrase is followed by the name of the fix and the time.

NOTE-

A branch route starts from a point on an existing ALTRV, whereas a partial route starts from a non-ALTRV section, such as an IR route, warning area exit point, etc.

**EXAMPLES-**

**BEGIN BRANCH RTE LUCID98.99 FL210B230  
FROM STL 0200**

**((BR LUCID101-103 FL250B260 FROM STL  
BEGIN BRANCH RTE LUCID98.99 FL200B220  
DPRT ORBIT AT 0232**

**((BR LUCID101-103 FL230B250 EXIT STA-  
TIONARY RESERVATION AT 3000N 6600W 0330**

Add

**h. BEGIN CMN RTE or BEGIN CMN RTE/TIM-  
ING/ALT or ((CR, - Defines a route formed by the  
merger of two or more flight paths when "JOIN" is  
not used. This phrase should follow all of the  
branch routes which merge into the common route.  
It should be followed by:**

**1. Call signs of all aircraft merging into this  
route at its starting point.**

**2. Altitude.**

**3. From (fix/time). (optional) indicates the point  
at which the aircraft merge; the phrase is followed  
by the name of the fix and the time.**

**EXAMPLE-**

**BEGIN CMN RTE BONE11-15 LUCID 98.99  
FL190B220 FROM MEM 0200  
((CR BONE11-14 FL210B230 FROM STL 0200**

Add

**i. BEGIN (number)NM FRONT (number)NM  
EITHER SIDE OF A CENTER LINE (fix/  
time)...(fix/time) FRONT ENDS. Describes an  
event which occupies a frontal width, measured per-  
pendicular to the direction of flight, which is great-  
er than normal. The broad front event is the speci-  
fied number of nautical miles wide and is centered  
on a line of the specified fixes; two or more fixes  
should be specified.**

**EXAMPLE-**

**DENNS 0321 BEGIN 60NM FRONT 30NM EI-  
THER SIDE OF A CENTER LINE FUFFE 0406  
DANKA 0451 FRONT ENDS**

Add

**j. BEGIN PARTIAL RTE or ((PR or ((...  
Used when it is desired to start the ALTRV en  
route. There are four types of partial route formats:**

**1. A PR may be used when the pilot wishes to be  
expedited on departure or for security reasons.**



EXAMPLE-

((PR FL270B280 AEX 0200 ALTRV BEGINS LFK  
0230 MCN 0300

2. A PR may be used for an ALTRV coming from  
an international departure point inbound to U.S.  
airspace.

EXAMPLE-

((PR FL240B260 4300N 3500W 0300 4300N 4000W  
0340 4300N 4500W 0410

3. A PR may be used for aircraft recovering from  
special use airspace and returning back to destina-  
tion on an ALTRV.

EXAMPLE-

AEX 0300 ALTRV ENDS IFPP INTO MORRIS  
MOA DLA 1+00  
((PR FL270B290 AEX 260/040 0400 ALTRV BE-  
GINS DRCT AEX 0420 FTW 0440

4. PR may be used for an ALTRV beginning over  
a fix at a specific time.

EXAMPLE-

((PR FL270B290 ALTRV BEGINS OVER AEX AT  
0000 (1340Z) LFK 0020 CEW 0120  
(In item F)  
F. ETD: ALTRV BEGINS OVER AEX AT 121340  
ADMIS 20 SEC AVANA OVER  
AEX 121440

Add

k. CELESTIAL NAVIGATION (CELNAV). This  
may be filed for use in a Broad Front.

EXAMPLE-

FIX 0321 BEGIN 30NM FRONT CEL-NAV 15NM  
EITHER SIDE OF A CENTER LINE FIX 0355 FIX  
0421 FIX 0433 FRONT ENDS FIX 0500

Add

l. CLMB. Indicates that the new altitude range  
extends above the old altitude and does not include  
all of the previous altitudes. A level-off point  
(LVLOF) is required.

EXAMPLE-

FL280B310 LVLOF BY FSD 319/060 0213 OBR  
0222 MOT 0252 CLMB FL390 LVLOF W/ 20NM

Add

m. CMPS. Indicates that the new altitude includes some of the previous altitude range but does not extend above or below the old altitude range. A level-off point (LVLOF) is required.

EXAMPLE-

FL280B310 LVLOF BY FAM 134/067 0054 FAM 0104 LMN 0139 CMPS FL310 LVLOF BY FSD 0205

Add

n. CROSS (fix/time) AT (altitude) OR ABOVE/BELOW. Restricts the climb or descent to an altitude so that the ALTRV will be within the specified altitude range when passing over the specified fix. A level-off point (LVLOF) is required.

EXAMPLE-

CLMB FL260B280 CROSS CAP 0105 AT FL250 OR ABOVE LVLOF BY BVT 0210

Add

o. DRCT. Utilized to eliminate doubt as to when an action occurs.

EXAMPLE-

FROM MEM DRCT LIT 0250

Add

p. DSND. Indicates that the new altitude range extends below the old altitude range and does not include all of the previous altitudes. A level-off point (LVLOF) is required.

EXAMPLE-

FL390 LVLOF BY VUZ 0025 DSND FL280B310 LVLOF BY FAM 134/067 0054

Add

q. ENCAN or EXCAN. Point and time at which aircraft will enter or exit Canadian airspace. These fixes must be defined as both a fix/radial/distance and a latitude/longitude; one of these must be enclosed in square brackets "[ ]," but not both.

EXAMPLE-

YSC 205/026 [4500N 7200W] 0206

ENCAN DRCT

YIB 0230 POI 330/38[4716N 9130W] 0300 3XCAN

Add

r. END CMN RTE. Point at which the aircraft will separate into two or more routes.

EXAMPLE-

((CR BONE11-14 FL210B230 STL 0200 MKC 0240 END CMN RTE

Add

s. END RTE or )). A general terminator for routes; the fix/time which precedes this event is the final point of the route (LAND, IFPP, END CMN RTE, JOIN CMN RTE, or "...") may be substituted for this phrase. It does not indicate the disposition of the aircraft at the point of termination.

EXAMPLES-

STL 0200 END RTE

STL 0200 ))

STL 0200 LAND

STL 0200 IFPP

STL 0200 END CMN RTE

STL 0200 JOIN CMN RTE

STL 0200 ...

Add

t. END SUPERSONIC. Point where supersonic speed will cease. (See Accelerate to Supersonic)

EXAMPLE-

BOS 0200 ACCELERATE TO SUPERSONIC 4200N 6700W 0230 END SUPERSONIC

Add

u. ENTER STATIONARY RESERVATION or ENTER MANEUVER AREA or ENTER TIMING TRIANGLE. Utilized whenever it is desired to reserve a stationary volume of airspace within a moving ALTRV for some period of time; point and time of entry are indicated by the fix/time which precedes the phrase. The phrase should be followed by:

1. Definition of the vertical altitude range of the stationary reservation; may be omitted if the range is the same as the altitude held prior to entry into the reservation.

2. Definition of the boundary of the stationary reservation. One of the following phrases should be utilized:

(a) (number)NM EITHER SIDE OF A LINE BETWEEN (fix)...(fix). Defines a corridor the indicated number of nautical miles wide centered on the line segments which connect the specified fixes; specify two or more fixes.

Add

(b) BNDD BY (fix)(fix)...(fix) or WITHIN AN AREA BNDD BY (fix)(fix)...(fix). Defines an area bounded by the line segments which connect the specified fixes; specify three or more fixes.

(c) WITHIN (number)NM RADIUS OF (fix) -  
Defines a circle with a radius of the indicated num-  
ber of nautical miles centered about the specified  
fix.

3. EXIT AT (fix/time) or EXIT STATIONARY  
RESERVATION AT (fix/time) OR EXIT TIMING  
TRIANGLE AT (fix/time). Point and time of exit  
specified by the fix/time which follows the phrase.

EXAMPLES-

UPP 0123 ENTER STATIONARY RESERVATION  
090B110 WITHIN AN AREA BNDD BY UPP MUE  
IAI IAI 320/050 EXIT AT UPP 0223  
OBH 0345 ENTER MANEUVER AREA 20NM EI-  
THET SIDE OF A LINE BETWEEN OBH ONL  
EXIT AT ONL 0358  
OBH 0123 ENTER TIMING TRIANGLE BNDD BY  
OBH ONL ONL 180/050 EXIT TIMING TRIANGLE  
AT ONL 0223  
UPP 0305 ENTER MANEUVER AREA WITHIN  
50NM RADIUS OF UPP EXIT MANEUVER AREA  
AT UPP 200/050 0345

Add

v. IBASF (number). Point and time at which air-  
craft will initiate a stream formation with the air-  
craft separated by the specified number of minutes.

EXAMPLES-

TUL 0038 IBASF 5  
TUL 0038 IBASF 12

NOTE-

The system will not modify the ALTRV length to ac-  
commodate the specified spacing. If the spacing will  
place aircraft outside the reservation, the AVANA  
time should be increased accordingly.

w. IFPEP (Individual Flight Plan From Point).  
Point and time at which aircraft will proceed to  
their destination on individual flight plans. This  
event is used to allow the controller to pre-plan  
clearances prior to the break-away fix. Most for-  
ign nations mandate IFPEP information. File all  
IFPEP routing information to and from the  
ALTRV:

1. To join the ALTRV.

2. When receiver(s) and/or tankers leave ALTRV  
en route.

**EXAMPLE-**

**Item D: ...OKC 0310 LEAVE EXXON02 IFPPF TO KGSB**

**Item G: ...IFPPF RTG FOR EXXON02 FROM OKC...REQ CLMB FL310 DRCT CAP FAM MEM JAN**

**3. When receiver/tanker buddy launch and terminate ALTRV en route.**

**EXAMPLE-**

**Item A: TIGER1-10 EXXON 3-5**

**Item D: ... FIX 0310 FIX 0340 ALTRV ENDS IFPPF**

**Item G: IFPPF RTG FOR TIGER1-10 FROM FIX ...REQ FL260B270 DRCT FIX FIX FIX DESTINATION FIX.**

**IFPPF RTG FOR EXXON3-5 FROM FIX...REQ CLMB FL290 DRCT FIX FIX FIX DESTINATION FIX.**

**4. When receiver/tanker join the ALTRV en route and terminate the ALTRV en route IFPPF routing information is required for both receiver and tanker to and from the ALTRV.**

**5. When receivers file air spares. The project officer is required to file IFPPF routings for air spares from the break away FIX back to destination.**

**EXAMPLE-**

**Item D: ...FIX 0340 LEAVE AIR SPARES MAZ-DA27-28 IFPPF TO KDYS FIX 0400**

**Item G: IFPPF RTG FOR AIR SPARES MAZ-DA27-28 FROM FIX...REQ CLMB FL280 DRCT FIX FIX FIX DESTINATION FIX.**

Add

**x. JOIN (callsign). Point and time at which the specified aircraft merge with aircraft from another route on a common route. (See Leave)**

**EXAMPLE-**

**FSD 0213 ARCP JOIN INSET34**

Add

**y. JOIN CMN RTE TO (fix). - Point at which aircraft will join a route described on another ALTRV. The phrase is followed by:**

**1. Fix/time at which aircraft leave the common route, or**

**2. "END" when the aircraft will proceed with the other ALTRV to destination, or ALTRV ending point.**

EXAMPLE-JAX 0155 JOIN CMN RTE TO MIA 0344JAX 0245 JOIN CMN RTE TO END

Add

z. LAND. - Point at which aircraft will land.EXAMPLE-IAD 0534 LAND

Add

aa. LEAVE (call sign). - Point and time at which the specified aircraft are to separate from the route being defined. This phrase is used in the following circumstances:1. When it is desired to defer the description of the separating aircraft's flight path until the description of the current route is completed.2. When the flight path of the separating aircraft is defined on another ALTRV.3. When the flight path of the separating aircraft is not part of the ALTRV.(See Join)EXAMPLE-MOT 0311 LEAVE INSET34

Add

ab. LVLOF or LVLOF BY(fix)or LVLOF W/I. Altitude transition is to be completed by the fix following LVLOF or LVLOF by or, within the specified number of nautical miles of the fix which precedes LVLOF W/I; this phrase is not needed when the new altitude contains all of the previous altitude.EXAMPLE-FL250B270 FIX 0200 XPND FL250B280 LVLOF BY FIX 0220

Add

ac. ORBIT W/I (number)NM RADIUS DPRT ORBIT AT (time). - Utilized to orbit aircraft within the specified number of nautical miles about the fix which precedes the phrase and to have the aircraft depart the orbit at the specified time; the use of "W/I and/or "AT" is optional.EXAMPLE-MKC 0213 ORBIT 30NM RADIUS DPRT ORBIT AT 0233

**NOTE-**

When aircraft will follow the same route but depart the orbit at different times, indicate only the elapsed time of the first aircraft to depart. Information specific to individual aircraft should be placed in square brackets "[ ]."

**EXAMPLE-**

MKC 0213 ORBIT W/I 30NM RADIUS DPRT ORBIT 0233 IBASF 10 [BOXES06 0233 BOXES07 0243 BOXES08 0253]

Add

ad. Rendezvous (RNDZ) (call sign). Same as JOIN.

Add

ae. STATIONARY RESERVATION. This is the first phrase in Item D whenever a stationary ALTRV is being utilized. The phrase should be followed by definitions of the:

1. Vertical altitude range.

2. Boundary. One of the following phrases should be utilized:

(a) (number)NM EITHER SIDE OF A LINE BETWEEN (fix)...(fix) Defines a corridor; the indicated number of nautical miles wide centered on the line segments which connect the specified fixes; specify two or more fixes.

(b) BNDD BY (fix)(fix)...(fix) or WITHIN AN AREA BNDD BY (fix)(fix)...(fix) Defines an area bounded by the line segments which connect the specified fixes; specify three or more fixes.

(c) WITHIN (number)NM RADIUS OF (fix) Defines a circle with a radius of the indicated number of nautical miles centered about the specified fix.

3. Duration of the activation, by indicating "FROM (day of the month and UTC time month and year) TO (day of the month and UTC time month and year)."

**EXAMPLE-**

STATIONARY RESERVATION 090B110 WITHIN AN AREA BNDD BY UPP MUE IAI IAI320/050 FROM 200035 JULY 1997 260400 TO 260400 JULY 1997

Add

af. XPND. Indicates that the new altitude range extends above and/or below the old altitude range and includes all of the previous altitudes.

EXAMPLE-

CMPS FL310 LVLOF BY FSD 0205 FSD 319/020 0207 XPND FL280B310

Add

ag. Point at which the aircraft will exit CARF jurisdiction and will cease to be defined.

EXAMPLE-

SOK 0210...

3-105 ITEM D-ROUTE OF FLIGHT

Delete

Add

3-10-5 EVENTS THAT PRECEDE FIX/TIME

The following phrases refer to events that immediately precede fix and time: LVLOF;CROSS RESTRICTION; BEGIN BRANCH ROUTE, ALTER-NATE ROUTE, PARTIAL ROUTE COMMON ROUTE; EXIT AT.

3-106 ITEM D-DESTINATION

Delete

Add

3-10-6 ALTRV APREO EXAMPLES

Add

The following are examples of formatted ALTRV APREO's.

Add

a. Moving ALTRV with tankers joining en route and leaving the ALTRV IFPFP:

ALTRV APREO BUSY LEADER OSCAR 97 1/6

A. PRO01,04,06 ZESTY51-55

B. 3B52/A 5KC135/A

C. KRME

D. FL280B310 RAVEC GSS 325/025 0007 SYR 042/087 0018 LVLOF BY PLB 281/015 0027 PLB 216/053 0035 PLB 216/096 0041 XPND FL260B310 JOIN ZESTY56-58 3KC135 IFPFP KGSB GSS 0049 ARIP CMPS FL260B290 LVLOF W/I 50NM DRCT SYR 273/064 0105 ARCP AIRFL BEGINS FNT 105/105 0137 LEAVE PRO01,04,06 ZESTY 56-58 IFPFP TO ((BR ZESTY51-55 FL260B290 FROM FNT 105/105 0137 CMPS FL280B290 LVLOF W/I 10NM DRCT FNT 112/08242 DJB 288/022 0153 APE 001/043 0159 APE 113/034 0207



HNN 023/041 0213 HNN 0229 ENTER MA-  
NEUVER AREA BNDD BY HNN HNN 176/023  
HNN 118/045 HNN 086/040 EXIT AT HNN 0229  
CMPS FL280 LVLOF W/I 10NM DRCT FLM  
177/046 0238 PXV 032/034 0303 CAP 0328 J80  
MKC 037/031 0357 LNK 224/059 0426 CLMB  
FL290 LVLOF W/I 10NM ENTER MANEUVER  
AREA BNDD BY LNK 224/084 LNK 176/068 LNK  
172/044 LNK 237/063 EXIT AT LNK 224/059 0434  
OBH 168/025 0442 OMA 064/033 0501 IOW 520  
DRCT SBN 253/041 0545 DJB 288/028 0610 ETG  
260/010 0635 SYR DRCT GSS 060/017 0709 RME  
0729 LAND

E. KRME 0729

F. ETD PRO01 ZESTY51-53 290855 APR 1997  
ADMIS MITO  
PRO04 ZESTY54-55 290955 ADMIS MITO PRO06  
291055 AVANA 291155

G. TAS: 430KTS CRUISE/390KTS AIRFL/340KTS  
LOW LEVELPROJECT OFFICER: MAJ. STE-  
FANZIC DSN 555-5555/COMM 111- 555-1111

ALTERNATE PROJECT OFFICER: CAPT. KARI  
DSN 555-5556/COMM 111- 555-2222

ADDITIONAL INFORMATION: MARSA ALL  
BUSY LEADER OSCAR AIRCRAFT.

IFPPF ROUTING FOR PRO01, 04, 06 FROM FNT  
105/105: REO FL350 DRCT CRW PSB GSS  
060/017 RME.

ARTCC: ZBW, ZOB, ZDC, ZTL, ZID, ZIX, ZKC,  
ZMP, ZAU, INFO ZNY

ALTRV APREO MAPLE FLAG DEPLOY 97/4

A. LION1-6

B. 6F15/R

C. KVPS

D. FL270B290 RAVEC CEW 009/024 0007 J39  
LVLOF BY MGM 0014 J39 VUZ 0025 VUZ  
333/121 0039 ARIP FAM 134/067 0054 ARCP JOIN  
NORGE99 KC135 IFPPF FROM KIAB AIRFL  
DRCT FAM 0104 LMN 0139 AIRFL ENDS LEAVE  
NORGE99 IFPPF TO KIAB FSD 0205 J45 FSD  
319/020 0207 ARIP FSD 319/060 0213 ARCP JOIN  
INSET 34 KC135 IFPPF FROM KRDR AIRFL

DRCT ABR 0222 MOT 0252 4900N 10220W 0300  
ENCAN 4940N 10315W (MOT 304/061) 0314  
AIRFL ENDS LEAVE INSET 34 IFPEP TO KRDR  
CLMB FL330 LVLOF W/I 20NM DRCT VLN 0348  
UOD 0355

E. CYOD

F. ETD: 111750 MAY 1997 ADMIS 20 SEC AVANA  
111850

G. TAS: 420KTS AIRFL/510KTS CRUISE

PROJECT OFFICER: MAJ TRACY

DSN 904-4426, COMM 703-904-4426

ALTERNATE PROJECT OFFICER:

CAPT KELLY DSN 904-4400, COMM  
703-904-4427

ARTCCS CONCERNED: ZIX ZTL ZME ZKC  
ZMP ARU ADDITIONAL INFORMATION:  
MARSA ALL MAPLE FLAG DPLY ACFT EN-  
TIRE MISSION. ALL ACFT MNPS CERTIFIED.

IFPEP RTG FOR INSET 34 FROM 4940N 10315W  
REQ CLMB FL390 DRCT FIX.. FIX.. FIX.. FIX

Add

b. Stationary ALTRV which includes aircraft:

ALTRV APREQ BUSY OBSERVER FERTILE  
SPADE 97 2/7

A. RIMER15-16

B. 2HB52/A

C. KRME

D. STATIONARY RESERVATION SURFACE TO  
160 WITHIN AN AREA BNDD BY 4000N 6600W  
4000N 6200W 3600N 6200W 3600N 6600W FROM  
012200 MAY 1997 TO 020200 MAY 1997.

E. KRME

F. N/A

G. TAS: 430KTS CRUISE/320KTS LOW LEVEL

PROJECT OFFICER CAPT ROGER DSN  
555-5555/COMM 111- 555-5556

**ADDITIONAL INFORMATION: MARSA ALL  
AMC AND ACC ACFT. NOPAR NEADS. BUSY  
OBSERVER AIRCRAFT WILL PARTICIPATE IN  
NORAD FERTILE SPADE 97-2/7. NOTE ALTRV  
APVL VALID WHILE IN CONTROLLED AIR-  
SPACE ONLY. ARTCC: ZBW, ZNY**

Add

**c. Stationary ALTRV which does not include air-  
craft:**

**ALTRV APREQ KANOE 97-1/7**

**A. N/A**

**B. N/A**

**C. N/A**

**D. STATIONARY RESERVATION SURFACE TO  
FL180 WITHIN 100NM RADIUS OF 2030N  
16000W FROM 132200 JUN 1997 TO 132330 JUNE  
1997**

**E. N/A**

**F. N/A**

**G. PROJECT OFFICER CAPT MILLER DSN  
555-5555/COMM 111-555-5556**

**3-107 ITEM F-DEPARTURE TIME**

Delete

**3-108 ITEM G-REMARKS**

Delete

**3-109 UNKNOWN WORDS AND PHRASES**

Delete

**3-110 STATIONARY RESERVATIONS**

Delete

**4. OPERATIONAL IMPACT:** The operational impact is minimal: however, the components, and examples have changed and require review. There is clarification of terms and format requirements but no additional requirements.

---

**1. PARAGRAPH NUMBER AND TITLE:** 4-5-3, Duties with NORAD Headquarters or NORAD Region/Sector Commander's Staff.

**2. BACKGROUND:** This Section has been reconfigured for ease of use.

**3. CHANGE:**

**OLD**

**NEW**

**4-53 DUTIES WITH NORAD HEADQUARTERS  
OR NORAD REGION/SECTOR COMMANDER'S  
STAFF**

**4-5-3 DUTIES WITH NORAD HEADQUARTERS  
OR NORAD REGION/SECTOR COMMANDER'S  
STAFF**

h. Convene periodic meetings with NORAD/1<sup>st</sup> AF personnel at headquarters, region, and field level to ensure recognition of changing military requirements and adequacy of services.

Delete

#### **4-54 DUTIES WITH NORAD SECTORS COMMANDER'S/AIR DIVISION STAFF**

#### **4-5-4 ADDITIONAL ADLO DUTIES WITH NORAD SECTORS**

In cooperation with the commander's staff, the ADLO shall:

No change

a. Provide indoctrination briefings to assigned personnel concerning the interceptor and strike/target aircraft in the FAA ATC system, the related procedures including the FAA AFIO, the impact of air defense activities on the ATC system, and the attendant functions and responsibilities of both Air Defense and ATC facilities.

a. Provide indoctrination and periodic follow-on briefings to assigned personnel concerning the interceptor and strike/target aircraft in the FAA ATC system, the related procedures, the impact of air defense activities on the ATC system, and the attendant functions and responsibilities of both Air Defense and ATC facilities.

b. Conduct periodic briefings to acquaint NORAD Region/Air Division personnel of their responsibilities relative to the control of air defense aircraft.

Delete

c thru f

Reletter b thru e

Add

f. Assist the Faker Coordinator, the faker monitor team, and the operations crew weapons teams in resolving problems occurring with ATC facilities during exercises.

Add

g. Be present at, or return to, the ROCC/SOCC during increased air defense readiness conditions or as exercise conditions dictate.

Add

h. Assist in the planning and development of air defense exercises and participate in the critique.

#### **4-62 ALTITUDES**

Delete

#### **4-80 ADC AIR DIVISIONS/FAA REGIONS COORDINATION**

#### **4-7-10 ADC AIR DIVISIONS/FAA REGIONS COORDINATION**

Headquarters, through the Air Divisions, will keep FAA regions currently informed of the augmentation forces/bases of other Commands/Services which may be employed.

Headquarters NORAD will keep FAA regions currently informed of the augmentation forces/bases of other Commands/Services which may be employed. Changes, additions, and/or deletions to include contingency operations shall be provided.

#### **4-103 FIRE CONTROL OR DATA LINK TEST FLIGHTS**

Delete

#### **4. OPERATIONAL IMPACT: None.**

**2. BACKGROUND:** This change adds the requirement for CERAP's to furnish AMIS. The sub paragraphs were rewritten for clarity.

**3. CHANGE:**

**OLD**

**5-42 EXCEPTIONS TO FURNISHING AMIS**

- a. Aircraft are operated north of 25 degrees north latitude or west of 85 degrees west longitude at a true airspeed of less than 180 knots.
- b. Aircraft are operating in the Alaska ADIZ at a true airspeed of less than 180 knots, provided these aircraft maintain a continuous watch on the appropriate frequency.
- c. Aircraft are operating over an island or within 3 nautical miles of the coastline of any island located within the Hawaiian ADIZ.
- d. Aircraft are operated within 10 nautical miles of the point of departure within the continental United States.
- e. Aircraft are operated in accordance with exceptions provided by FAR Part 99.1 (c.) and (d.)

**5-42 Note.** AMIS shall be furnished on aircraft penetrating within the Southern Border Domestic ADIZ and western portion of the Gulf of Mexico Coastal ADIZ per mutual agreement between the FAA Southwest Region and the Southeast and the Southwest NORAD Sectors, respectively

**NEW**

**5-4-2 EXCEPTIONS TO FURNISHING AMIS**

- a. Aircraft are operating at a true airspeed of less than 180 KTS in the Hawaii ADIZ or over any island, or within 3NM of the coastline of any island, in the Hawaii ADIZ; or
- b. Aircraft are operating at a true airspeed of less than 180 KTS in the Alaska ADIZ while the pilot maintains a continuous listening watch on the appropriate frequency; or
- c. Aircraft are operating at a true airspeed of less than 180 KTS in the Guam ADIZ or
- d. Alternate procedures are agreed to by the FAA and military commanders concerned.

Delete

**NOTE-**

*AMIS shall be furnished on aircraft penetrating within the Southern Border Domestic ADIZ and western portion of the Gulf of Mexico Coastal ADIZ per mutual agreement between the FAA Southwest Region and the Southeast and the Western Air Defense Sectors, respectively.*

**4. OPERATIONAL IMPACT:** CERAP personnel need to become familiar with the provisions of 5-4-2.

**5-53 FORWARDING DVFR INFORMATION**

- Add
- d. thru f
- Add

**5-5-3 FORWARDING DVFR INFORMATION**

- d. DVFR discrete transponder code, if assigned.

Relettered e thru g

**NOTE-**

*Regardless of radar contact status, aircraft must be instructed to remain on the assigned DVFR code until the DVFR flight is no longer required.*

#### 4. OPERATIONAL IMPACT: None.

### 1. PARAGRAPH NUMBER AND TITLE: 9-1-2, Policy.

2. **BACKGROUND:** This change clarifies policies, criteria and procedures for special use airspace.

### 3. CHANGE:

#### **9-2 POLICY**

The FAA recognizes that the military has a continuing requirement to conduct certain training /RDT&E operations shall be conducted within ATC ASSIGNED AIRSPACE AREAS (ATCAA), altitude reservations ALTRV's, military operations areas (MOA), restricted areas, warning areas, or IFR military training routes (IR) so that these activities are separated from other IFR traffic. Flights to/from such areas shall be under the control of either FAA or military ATC facility to the maximum extent possible.

#### **9-3 DESCRIPTION**

The areas for military operations shall be described in terms of vertical and horizontal dimensions effective for a specified period of time.

a. Vertical Limits—The vertical limits of special use airspace are normally expressed as flight levels or as feet above mean sea level(MSL). When necessary to provide terrain clearance, floors may be expressed as feet above ground level (AGL). Unless otherwise specified, the work "to" an altitude or flight level means "to and including" that altitude or flight level. If the vertical limits do not include that altitude or flight level, the ceiling shall be specified as "to but not including."

b. Horizontal Limits—The horizontal limits of special use airspace are defined by geographical coordinates or other appropriate references that clearly describe their boundaries.

c. Time Periods—The period of time for which an area is assigned should normally be expressed in the following terms of reference:

#### **9-1-2 POLICY**

The FAA recognizes that the military has a continuing requirement to conduct certain training and RDT&E activities within airspace which is as free from other aircraft as is practicable. Therefore, certain special military training /or RDT&E operations shall be conducted within ATC assigned airspace (ATCAA), Altitude Reservation (ALTRV), military operations areas (MOA), restricted areas, warning areas, and IFR military training routes (IR) so that these activities are separated from other IFR traffic in controlled airspace. Flights to/from such areas shall be under the control of either FAA or military ATC facilities to the maximum extent possible. The policies and procedures for designating special use airspace (SUA) are contained in FAA Order 7400.2, Procedures for Handling Airspace Matters.

#### **9-1-3 AIRSPACE DESCRIPTION**

Delete

Airspace utilized for military operations shall be described in terms of lateral and vertical dimensions and specific times of use. In developing the dimensions and times of use for SUA and ATCAA descriptions, apply the criteria contained in Chapter 27, Section 2, of FAA Order 7400.2.

Delete

Delete

1. Sunset and sunrise;
2. Local time using the 24-hour clock system; e.g. 0700 to 1800 local time; and
3. Continuous;
4. Intermittent—Requires an associated time or NO-TAM provision. Not applicable to restricted areas without a “by NOTAM” provision
5. By NOTAM.

Delete

4. **OPERATIONAL IMPACT:** A thorough review of this section will provide the update on description of airspace (9-1-3).

1. **PARAGRAPH NUMBER AND TITLE:** 10-1-2, Objective.

2. **BACKGROUND:** This change proposal is being adopted in response to the many requests for interpretation. This change combines subparagraphs under 10-1-4 and adds 10-1-6 Chronology for clarification of the aerial refueling operation.

3. **CHANGE:**

**OLD****NEW****10-2. OBJECTIVE****10-1-2. OBJECTIVE**

Add

**NOTE-**

Approval of an aerial refueling track/anchor shall not preclude ATC from using such airspace after the completion of the rendezvous, provided that separation is applied in accordance with FAAO 7110.65 between non-participating aircraft and participating aircraft within the aerial refueling track/anchor.

**10-3 RESPONSIBILITY****10-1-3 RESPONSIBILITY**

The U. S. military services have agreed to conduct aerial refueling operations in accordance with the provision of this Chapter which provides standard guidance for all user commands involved in refueling operations.

The U.S. military services have agreed, to **the maximum extent possible, aerial refueling will be conducted on existing published tracks/anchor tracks and** to conduct aerial refueling operations in accordance with the provisions of this chapter which provides standard guidance for all user commands involved in refueling operations.

Add

**10-1-4 SEPARATION**

**Standard separation (in accordance with FAAO 7110.65) will be applied to aerial refueling aircraft.**

**10-4 DEVIATIONS****10-1-5 DEVIATIONS**

FAA regional administrators (theater commanders in areas not under FAA jurisdiction) may authorize deviations from provisions of this Chapter when military requirements cannot be supported within the established standards.

Add

a. FAA regional administrators/theater commanders may delegate this authority to subordinate command level as appropriate.

b. Approved deviations shall be fully coordinated and should contain provisions to ensure a level of safety equivalent to standards set forth in this Chapter.

Add

Add

**FAA regional air traffic division managers** (theater commanders in areas not under FAA jurisdiction) may authorize deviations from provisions of this chapter when military requirements cannot be supported within the established standards. Approved deviations shall be fully coordinated and should contain provisions to ensure a level of safety equivalent to standards set forth in this chapter.

**NOTE-**

Theater commanders must comply with host nation requirements.

Delete  
(Combined in Note)

Delete  
(Combined above)

**10-1-6 CHRONOLOGY**

The following is a basic chronology of the events for a typical air refueling operation in tracks and anchors. The exact sequence may vary as dictated by operational circumstances. For air refueling tracks, the en route rendezvous differs from the point-parallel rendezvous (see 10-5-4(a)5(a)) only in that the tanker does not delay at the ARCP and both tanker and receiver aircraft enter the aerial refueling airspace simultaneously.

**a. Aerial Refueling Track.**

**NOTE-**

Normally, the tanker aircraft enters the track at the ARCP, and the receiver aircraft enters at the (ARIP).

1. Tanker requests delay at the ARCP and advises ATC of the requested aerial refueling block altitudes.

2. ATC approves delay and issues clearance, or advises tanker to expect clearance, for the air refueling block.

**NOTE-**

If the delay is approved, the aircraft will enter the refueling pattern. If a hold is issued, aircraft will enter a standard holding pattern or as assigned by ATC.

3. Tanker enters orbit pattern airspace for delay at ARCP.



Add

**NOTE-**

**If no clearance is received, aircraft will hold in the direction of the air refueling pattern until their filed ARCT. If no clearance is received by the Air Refueling Control Time (ARCT), the aircraft will proceed down the AR track on its flight plan route; refueling is not authorized.**

**4. Receivers cleared to requested altitude and IFR separation is established prior to ARIP and release to tanker Communication Rendezvous (C/R) frequency.**

**5. Tanker declares MARSA.**

**6. ATC releases receiver to tanker C/R frequency not later than the ARIP.**

**7. ATC issues clearance to conduct aerial refueling along the track, and issues block altitude clearance, if not previously accomplished.**

**8. ATC shall ensure non-participating aircraft remain clear of the area until rendezvous is complete.**

**9. Tanker and receiver aircraft complete rendezvous and proceed down track. During aerial refueling, the tanker is responsible for receiver aircraft navigation along the track and for all tanker/receiver communications with ATC.**

**10. Tanker advises ATC of tanker and receiver end aerial refueling altitude requests at least five (5) minutes prior to exit.**

**11. At or prior to the exit point, ATC issues tanker and receiver altitude clearances, transponder codes, and if requested, amended routing.**

**12. Prior to exit, tanker vertically positions the aircraft in the formation within the air refueling airspace to facilitate breakup at the exit point (normally, tanker at highest altitude of aerial refueling block and receiver at lowest altitude).**

**13. MARSA is terminated when standard ATC separation is established and ATC advises MARSA is terminated.**

Add

**b. Anchor Aerial Refueling.**

1. Anchor aerial refueling operations involve the same basic procedural elements as required for track refueling, except that both tanker and receiver aircraft file a delay in the anchor area and all air refueling activity is conducted within the anchor as per paragraph 10-3-2.

2. Additional requirements, such as, alternate entry/exit points, MRU procedures, etc., shall be specified in a letter of agreement, as required.

**4. OPERATIONAL IMPACT:** Paragraph 10-1-6 CHRONOLOGY provides a basic sequence of events for a typical air refueling operation and provides assistance in understanding requirements identified in this chapter.

**1. PARAGRAPH NUMBER AND TITLE:** 10-2-1 Description.

**2. BACKGROUND:** This change clarifies the track description and broadens the type of navigation equipment used along air refueling tracks.

**3. CHANGE:**

**OLD**  
**10 21 DESCRIPTION**

A track description shall contain at least the following components:

a. ARIP.

b. ARCP with orbit pattern.

c. Navigation check points.

d. Exit point.

e. Operational altitudes.

**10 22 NAVIGATION ALONG AIR REFUELING TRACK**

Track navigation shall be accomplished predicated on one of the following:

**NEW**  
**10-2-1 DESCRIPTION**

a. Aerial refueling tracks are established to accommodate refueling operations along a prescribed route. An aerial refueling track consists of an ARIP, ARCP, and an exit point. Navigation check points between the ARCP and exit point are specified, as required, to facilitate navigation along the route. It also includes the tanker orbit pattern at the ARCP, and the altitude block(s) assigned for the track.

b. Instructions for preparing and submitting track proposals are contained in Section 4 of this chapter.

Delete

Delete

Delete

**10-2-2 NAVIGATION ALONG AIR REFUELING TRACK**

Navigation along an aerial refueling track shall be accomplished using a combination of airborne equipment and NAVAID's as appropriate.

a. NAVAID's while within useable range.

Delete

b. Airborne radar along tracks defined in accordance with degree-distance route definition for those aircraft so authorized in FAAH 7110.65.

Delete

c. Airborne equipment along tracks defined by geographical coordinates in overwater or remote areas without NAVAID's.

Delete

Add

**NOTE-**

**Whatever the method of navigation, participating aircraft shall be expected to adhere to the course centerline during aerial refueling operations unless deviations within/beyond the track are specifically approved by the ARTCC/CERAP, or are authorized in a procedural letter of agreement with the controlling agency.**

4. OPERATIONAL IMPACT: None.

1. PARAGRAPH NUMBER AND TITLE: 10-2-5 Tanker Orbit Patterns.

2. BACKGROUND: This change identifies typical orbit patterns and removes the requirement that patterns shall contain certain elements. This change also removes separation requirements that are contained in FAAO 7110.65.

3. CHANGE:

**10 25 TANKER ORBIT PATTERNS**

**10-2-5 TANKER ORBIT PATTERNS**

a. Tanker orbit patterns shall be contained within the following:

**The following describes typical orbit patterns for jet aircraft and turboprop/conventional type aircraft.**

(1) Turbojet - Normally, a rectangle 60 NM long (48 NM uptrack and 12 NM downtrack from ARCP or Anchor Point) and 25 NM wide, oriented longitudinally along the ARIP-ARCP or Anchor Point segment of the track so as to provide 7 NM of airspace on the non-holding side of the refueling track and 18 NM of airspace on the holding side. This pattern shall normally be designed for left turns. (Illustration 10-25a(1))

**a. Turbojet - Normally, a rectangle 60NM long (48NM uptrack and 12NM downtrack from ARCP or Anchor Point) and 25NM wide, oriented longitudinally along the ARIP-ARCP or Anchor Point segment of the track so as to provide 7NM of airspace on the non-holding side of the refueling track and 18NM of airspace on the holding side. This pattern shall normally be designed for left turns. When right turns are used, the orientation of the orbit pattern will shift accordingly. (See Figure 10-2-1, Components of a Typical Turbojet Aerial Refueling Track.)**

10-25a(1) Illustration - Components of a Typical Turbojet Aerial Refueling Track

Delete

(2) Conventional/Turboprop - Normally, a rectangle 34 NM long (27 NM uptrack and 7 NM downtrack from ARCP or Anchor Point) and 18 NM wide, oriented longitudinally along the ARIP-ARCP or Anchor Point segment of the track so as to provide 4.5 NM of airspace on the nonholding side of the refueling track and 13.5 NM of airspace on the holding side. The pattern shall normally be designed for left turns. (Illustration 10-25a(2))

**b.** Conventional/Turboprop - Normally, a rectangle 34NM long (27NM uptrack and 7NM downtrack from ARCP or Anchor Point) and 18NM wide, oriented longitudinally along the ARIP-ARCP or Anchor Point segment of the track so as to provide 4.5NM of airspace on the non-holding side of the refueling track and 13.5NM of airspace on the holding side. The pattern shall normally be designed for left turns. **When right turns are used, the orientation of the orbit pattern will shift accordingly. (See Figure 10-2-2, Components of a Typical Conventional/Turboprop Aerial Refueling Track.)**

10-25a(1) Illustration- Components of a Typical Turbojet Aerial Refueling Track

Delete

**b.** The maneuver required to effect joinup with receiver(s) shall be contained within the designated tanker orbit pattern airspace as defined in subparagraph a(1) and as depicted in Figure 10 25, Refueling Track ATC Protected/Designated Lateral Airspace. However, the "clearance to conduct air refueling" unless otherwise restricted by the controlling ATC facility, authorizes the tanker to extend the orbit pattern and proceed toward the ARIP as far as necessary to effect the rendezvous. During the period that the tankers are proceeding toward the ARIP to effect rendezvous, the lateral protected airspace is the same width as the orbit assigned airspace (18 NM on the holding side and 7 NM on the nonholding side).

Delete

10-25b Illustration--Refueling Track ATC Protected/Designated Airspace

Delete

10 26 LATERAL AIRSPACE PROTECTION

Delete

10 27 VERTICAL AIRSPACE PROTECTION

Delete

10-33 ARIP ESTABLISHMENT

**Note-**

Receiver entry at ARIP is not required when random rendezvous procedure has been prior coordinated with and approved by the tanker commander. All maneuvers required to effect rendezvous must be contained within designated airspace.

10-3-3 ARIP ESTABLISHMENT

**NOTE-**

*Receiver entry at ARIP is not required when random rendezvous procedures have been coordinated **prior to track/anchor entry** and approved by the tanker commander. All maneuvers required to effect rendezvous must be contained within designated airspace.*

10-35 LATERAL AIRSPACE PROTECTION

Delete

Unless the minimum size anchor pattern (normally 20 NM width and 50 NM length with protected airspace 28 NM wide and 84 NM long) is utilized, the criteria set forth in paragraph 10-26 shall apply.

**4. OPERATIONAL IMPACT:** Minimal.

1. **PARAGRAPH NUMBER AND TITLE:** 10-4-1 Track/Anchor Proposals.
2. **BACKGROUND:** This change is being adopted to reflect current requirements and clarifies who is responsible for ensuring compliance with procedures in LOA.
3. **CHANGE:**

**10-41 TRACK/ANCHOR PROPOSALS**

Proposals for establishing a refueling tracks or anchors shall be submitted to the appropriate ARTCC with a copy to the appropriate regional military representative. In those airspace areas not under the direct jurisdiction of FAA, the theater command headquarters shall develop procedures for coordination and approval of proposed tracks and anchors.

**10-43 CRITERIA FOR ESTABLISHMENT**

e. Where anchors are established in ATCAA's, entry and exit points must be located on the boundary for use as handoff or control transfer points between ATC agencies and military radar facilities.

Add

f. thru h

(1) Simultaneous refueling in opposite direction may be authorized between single AR tracks

(2) Simultaneous refueling in opposite direction may be authorized between single AR tracks, which are vertically separated by a minimum of 2000 feet between altitude blocks.

(3) thru (7)

**10-44 APPROVAL NOTIFICATION****10-4-1 TRACK/ANCHOR PROPOSALS**

Proposals for establishing refueling tracks or anchors shall be submitted in the format and with the data depicted in Figure 10-4-1, to the appropriate ARTCC/CERAP with a copy to the appropriate regional military representative. In those airspace areas not under the direct jurisdiction of FAA, the theater command headquarters shall develop procedures for coordination and approval of proposed tracks and anchors.

**10-4-3 CRITERIA FOR ESTABLISHMENT**

e. Where anchors are established inside SUA or ATCAA's, entry and exit points shall be located on the boundary of the SUA or ATCAA for use as transfer of flight data information points, unless alternate entry and exit points are authorized by ATC.

**NOTE-**

If activation of the ATCAA or SUA is desired for refueling operations, a request shall accompany the initial request for air refueling operations.

f. The scheduling agency for the ATCAA shall ensure pilots comply with the procedures in the LOA.

Relettered g. thru i

1. Simultaneous refueling in opposite direction may be authorized between single AR tracks, which are vertically separated by a minimum of 2,000 feet between altitude blocks.

Redesignated 2. thru 6.

**10-4-4 APPROVAL NOTIFICATION**

After approval of an aerial refueling track or anchor, the ARTCC, the ARTCC shall forward the information required by paragraph 10-45 and any other pertinent information to the appropriate regional military representative with a copy to the FAA SACLO for final approval. In areas not directly under FAA jurisdiction, the theater command headquarters may, after final coordination and approval, forward the information required by paragraph 10-45 directly to DMAAC for publication.

Add

#### **10-51 PROVISIONS FOR CONDUCTING AERIAL REFUELING**

The conduct of aerial refueling is based on the strict requirement that participating aircraft remain within specifically designated airspace. Air refueling operations are normally conducted on tracks or in anchor areas published in the DOD Flight Planning (FLIP) document. There are certain mission requirements and operational considerations which may necessitate en route refueling operations or the establishment of special tracks/anchors not published in the FLIP document or in MOA/ATCAA areas when covered in letters of agreement.

a. En route refueling may be conducted between aircraft within a flight when the refueling is performed within the flight's assigned altitude block/airspace. When this occurs, ARTCC will be advised prior to commencing air refueling operations.

b. When special tracks/anchors must be established, the command possessing the receiver aircraft shall ensure compliance with the provisions set forth in paragraph 10-63.

c. All refueling operations shall be conducted on an IFR flight plan at assigned altitudes/FL's except as provided for in paragraph 10-70

Add

a. After receiving all impacted ARTCC/CERAP's concurrence of an aerial refueling track or anchor, the ARTCC/CERAP in which the AR Track is initiated shall forward the Aerial Refueling Track/Anchor Proposal (See Figure 10-4-1), including all information required in Figure 10-4-1 and any other pertinent information to the regional AT division and military representative.

b. In areas not directly under FAA jurisdiction, the theater command headquarters may, after final coordination and approval, forward the information required by paragraph 10-4-5 directly to National Imagery and Mapping Agency (NIMA) St. Louis for publication.

#### **10-5-1 PROVISIONS FOR CONDUCTING AERIAL REFUELING**

Delete

Delete

Delete

Delete

a. Aerial refueling is based on the requirement that participating aircraft operate and remain in specifically designated airspace.

1. Departure or other clearances which contain the track or anchor as a route element are not intended to authorize the aerial refueling operation itself.

NOTE-

A further specific ATC clearance for the conduct of aerial refueling is required except on an ALTRV.

2. Throughout the refueling operation, controller initiated heading assignments may not be effected without the concurrence of the tanker.

3. Each aircraft must receive a specific clearance prior to leaving the refueling track/anchor. In the event of no clearance:

(a) The tanker(s) and receivers will continue on the tanker's filed route and assigned block altitudes until a clearance to separate the flight can be obtained, or

(b) The aircraft will request an extension of the aerial refueling track.

NOTE-

Aerial refueling operations are terminated at the end of the refueling point unless an extension of the aerial refueling track is received.

(c) Aerial refueling operations are normally conducted on tracks or in anchor areas published in the DOD FLIP document "AP/1B."

Add

b. There are certain mission requirements and operational considerations which may necessitate en route refueling operations or the establishment of special tracks/anchors not published in the FLIP document or in MOA/ATCAA/Joint-use restricted areas when covered in letters of agreement.

1. En route refueling may be conducted between aircraft within a flight when the refueling is performed within the flights assigned altitude block/airspace. When this occurs, ARTCC/CERAP will be advised prior to commencing air refueling operations.

2. When special tracks/anchors must be established, the command processing the receiver aircraft shall ensure compliance with the provisions set forth in Section 6 of this chapter.

Add

c. All refueling operations shall be conducted on an IFR flight plan at assigned altitudes/FL's except as provided for in paragraph 10-6-12 of this chapter.

Add

d. All aircraft conducting aerial refueling operations should request and be assigned at least three (3) consecutive altitudes/flight levels.

1. Refueling aircraft may use these altitudes/flight levels as required to accomplish refueling operations. If additional altitudes are required to satisfy requirements, prior clearance shall be obtained from the appropriate ATC facility.

NOTE-

Additional altitudes shall not be requested/granted for practice of emergency break-away procedures.

2. The provisions of this paragraph do not apply when aircraft are operating in an ALTRV or when clearance has been granted by ATC for the aircraft to operate as an en route cell formation.

**4. OPERATIONAL IMPACT:** None.

- 
1. **PARAGRAPH NUMBER AND TITLE.** 10-5-3 MARSA Applicability for Aerial Refueling.
  2. **BACKGROUND:** This change clarifies the application of MARSA during aerial refueling.
  3. **CHANGE:**

OLD

10-53 MARSA APPLICABILITY FOR AERIAL REFUELING

b. MARSA ends between the tanker and receiver/s when the tanker advises ATC that the tanker and receiver/s aircraft are vertically positioned within the Air Refueling Airspace and ATC advises MARSA is terminated.

d. Once rendezvous is completed, headings and altitudes assignments may be made with the tanker concurrence with MARSA remaining in effect.

e. Upon rendezvous completion, each tanker shall keep receiver/s aircraft within 3 miles of the tanker until MARSA is terminated.

NEW

10-5-3 MARSA APPLICABILITY FOR AERIAL REFUELING

Moved to d. thru d1.

c. Once rendezvous is completed:

1. Headings and altitudes assignments may be made with the tanker concurrence with MARSA remaining in effect.



f. After air refueling clearance is received and until rendezvous is completed, aerial refueling airspace from the ARIP to the ARCP is sterilized. After rendezvous is completed and the tanker/receiver/s have proceeded down track, other non-participating aircraft may be cleared through the refueling block airspace with proper separation.

Moved from b.

2. Each tanker shall keep receiver(s) aircraft in either standard or non-standard formation until further ATC clearances are received and standard separation is achieved.

3. Other nonparticipating aircraft may be cleared through the refueling block airspace with proper separation once the tanker and receiver(s) have proceeded down track.

d. MARSA ends between the tanker and receiver(s) when:

1. The tanker and receiver aircraft are vertically positioned within the air refueling airspace.

2. Standard ATC separation is established and

3. ATC advises MARSA is terminated.

4. OPERATIONAL IMPACT: None.

---

1. PARAGRAPH NUMBER AND TITLE. 10-5-4, Criteria for Scheduling.

2. BACKGROUND: This change adds separation requirements and entry interval time.

3. CHANGE:

#### OLD

##### **10-53 CRITERIA FOR SCHEDULING**

a(2)(b) May be authorized between single AR tracks, which are vertically separated by a minimum of 2,000 feet between altitude blocks.

a(5)(b) Buddy, On-Course, and En Route Cell Rendezvous - A 10-minute entry interval shall be scheduled between air refueling cells at the same altitude.

Add

a(6) MARSA is applicable between a refueling operation and other aircraft specifically indicated in the refueling schedule or approved by the scheduling unit to transit the published track.

b(1) and b(2)

#### NEW

##### **10-5-4 CRITERIA FOR SCHEDULING**

Moved to b3

a5(b) En Route Cell Rendezvous - A minimum 20 minute entry interval shall be scheduled between air refueling cells at the same altitude and the same geographic point. Both tanker(s) and Receiver(s) shall arrive at the rendezvous point within +/- 5 minutes of the rendezvous control time. (See FIG 10-5-1, FIG 10-5-2, and FIG 10-5-3)

a5(c) Mixed Rendezvous - Air refueling tracks scheduled for an en route rendezvous followed by a point-parallel or vice versa, the minimum entry interval shall be 40 minutes.

Moved to e

Redesignated b1 and b2

Add

**b3. Multiple air refueling in one anchor/anchor track - 2,000 feet vertical separation between altitude blocks shall be planned and used.**

b(3)

Redesignated b4

**d. Tanker/receiver shall be scheduled to depart the track or anchor at specified navigation checkpoints or exits; however, an ATC clearance shall be requested from the appropriate ATC facility to depart the track or anchor when refueling is completed.**

**d. Tanker/receiver shall be scheduled to depart the track or anchor at specified navigation checkpoints or exits. In event of no clearance, the tanker(s) and receiver(s) will continue on the tanker's filed flight plan until a clearance to separate the flight can be obtained, or request an extension of the aerial refueling track, as appropriate.**

Add

**e. MARSA may be applicable between a refueling operation and other aircraft specifically identified in the refueling schedule or approved by the scheduling unit to transit the published track/anchor.**

#### **10-54 SCHEDULING RESPONSIBILITIES**

**c(3) Promptly notify the scheduling unit of any canceled refueling.**

#### **10-5-5 SCHEDULING RESPONSIBILITIES**

**c3. Promptly notify the scheduling unit of any canceled or delayed refueling.**

#### **10-56 FLIGHT PLAN REQUIREMENTS**

**a. Refueling levels requested for the refueling operations. TAC/ANG tactical fighter, reconnaissance aircraft require 1,000 feet separation between the lowest tanker altitude and the applicable receiver altitude from the track ARIP to ARCP or from the ARIP to anchor point. If this altitude separation cannot be provided, the participating aircraft are not authorized to proceed with the rendezvous.**

Add

#### **10-5-6 FLIGHT PLAN REQUIREMENTS**

**a. Refueling levels requested for the refueling operations. All aircraft require 1,000 feet separation between the lowest tanker altitude and the applicable receiver altitude from the track ARIP to ARCP or from the ARIP to anchor point. If this altitude separation cannot be provided, the participating aircraft are not authorized to proceed with the rendezvous.**

**b. ARCP/anchor point.**

**NOTE-**

**When operating in an air refueling anchor area, tankers are authorized to file directly to the anchor point without crossing an anchor area entry point.**

**c. ARIP.**

**NOTE-**

**Tankers conducting an en route rendezvous will also normally file to the ARIP.**

Add

**d. Duration of delay at ARCP/in anchor area.**

**d. Duration of delay at ARCP/ anchor point.**

#### **10-57 TANKER COMMANDER RESPONSIBILITIES**

#### **10-5-7 TANKER AIRCRAFT/FORMATION COMMANDER RESPONSIBILITIES**

Tanker commander shall be responsible for:

a. Remaining within the protected lateral, longitudinal, and vertical airspace of the refueling track/anchor including orbit patterns.

Add

c. Receiver navigation, regardless of the number of tankers or receivers, from the ARIP after rendezvous voice contact on air refueling frequency through completion of refueling operations except when under control responsibility of a military radar facility while in an anchor area.

d. Maintaining communications with the appropriate ATC facility. All communications during refueling operations, including those concerning the receivers, shall be between the ATC facility or military radar unit and tanker. To the extent practical, receivers shall establish communications with the tanker prior to or when departing the ARIP on the specified air refueling frequency. After establishing voice contact with receivers, the tanker shall advise receivers of receipt of clearances to conduct air refueling and assume position reporting responsibility for the receivers.

e. Coordinate altitude and route clearance:

f. Vertically positioning aircraft to the maximum extent practical prior to reaching the planned exit point.. The vertical separation of receivers and tanker aircraft shall be accomplished within the assigned altitudes and designed to beneficially contribute to the safe and efficient transfer of separation responsibility from the military, under the provisions of MARSA, to the ATC facility upon completion of refueling operations.

Add

#### 10-59 ATC CLEARANCE

a. Altitude blocks to conduct air refueling operations. Anchor area block altitude (except on an approved ALTRV).

Tanker aircraft or formation commander shall be responsible for:

a. Remaining within the assigned aerial refueling track.

#### NOTE-

Air refueling will not take place until MARSA is declared.

c. Receiver navigation, regardless of the number of receivers, after rendezvous completion through completion of refueling operations (air refueling and MARSA have been terminated) except when under control responsibility of a military radar facility while in an anchor/anchor track area.

d. Maintaining communications with the appropriate ATC facility.

1. All communications during refueling operations, including those concerning the receivers, shall be between the ATC facility or military radar unit and tanker.

2. To the extent practical, receivers shall establish communications with the tanker prior to or when departing the ARIP on the specified air refueling frequency.

3. The tanker shall advise receivers if the clearance to conduct air refueling has or has not been received.

4. Tanker(s) will assume position reporting responsibility for the receivers upon rendezvous completion.

e. Requesting further en route clearance/altitude assignment:

f. Vertically positioning aircraft prior to reaching the planned exit point, to facilitate the safe and efficient transfer of responsibility from the military, under the provisions of MARSA, to the ATC facility upon completion of refueling operations. The vertical separation of receivers and tanker aircraft shall be accomplished within the assigned altitudes.

h. Coordinate new aerial refueling track times with the scheduler if unable to meet the scheduled ARCT(s) and minimum entry intervals.

#### 10-5-9 ATC CLEARANCE

a. Entry to/exit from assigned aerial refueling altitude block.

Add

**b. Routing for each aircraft or formation flight if different than the flight plan routing.**

Add

Add

**c. Extending the refueling operation beyond the track/anchor exit point due to adverse winds, mission requirements, etc.**

**d. Additional altitudes in excess of those for which specific clearance has been granted (i.e., tobogganing.)**

Add

**b. Altitudes requested for tanker and receiver aircraft upon completion of air refueling.**

**c. Routing for each aircraft or formation flight when:**

**1. Exiting the refueling track prior to or beyond the exit point, or**

**2. Different from the flight plan routing.**

Relettered d.

**e. Use of altitudes in excess of those for which specific clearance has been granted (i.e., tobogganing).**

**NOTE-**

**During refueling, altitude and temperature conditions may exist which decrease the receiver's available thrust and maneuverability. In this event, the receiver may request a "toboggan" in order to receive a full fuel on load. The toboggan maneuver is accomplished by the tanker descending wings level at refueling airspeed and a constant rate of 200-300 FPM with the receiver maintaining the refueling contact.**

**10-61 ATC FACILITY RESPONSIBILITIES**

Add

**a. Receiver aircraft are released to tanker C/R frequency departing the ARIP, traffic conditions permitting, or unless otherwise coordinated.**

Add

b. thru d

**e. An ATC clearance, to be effective at the exit point/when MARSA ends, has been issued for each aircraft in the air refueling operation and acknowledged through the tanker aircrew.**

Add

f. thru h

**10-5-11 ATC FACILITY RESPONSIBILITIES**

**a. Standard IFR separation is maintained until MARSA is declared by the tanker.**

**b. After MARSA is declared, receiver aircraft are released to tanker C/R frequency departing the ARIP, traffic conditions permitting, or unless otherwise coordinated.**

**NOTE-**

**It is essential that receivers be released to the tanker no later than the ARIP. If ATC cannot release the receivers, additional instructions must be provided immediately. Any delay in releasing the receivers significantly complicates the air refueling.**

Relettered c thru e

**f. An ATC clearance is issued and acknowledged through the tanker aircrew for each aircraft or formation flight:**

**1. Refueling anchor.**

**2. Refueling track when exiting prior to/beyond the exit point, or if routing is different from the flight plan route.**

Relettered g thru i

**10-66 OPERATIONS OUTSIDE AN ALTRV**

a. Units shall submit an approval request directly to the ATC facility concerned at least 12 hours in advance to permit coordination and receipt of approval.

b(2) ARCP patterns or rendezvous points if On Course or En Route Cell Rendezvous is planned.

**10-70 VFR HELICOPTER REFUELING OPERATIONS**

a. Headquarters United States Air Force / Navy / Army have stated a requirement to conduct VFR helicopter in-flight refueling operations at altitudes from 4,000 feet AGL down to 1,000 feet AGL at speeds below 150 knots.

b. The justification for VFR helicopter refueling procedures has its origin in the lack of ability of FAA ARTCC's to maintain low-altitude radio/radar coverage in certain areas such as mountainous area in Western USA. Additionally, VFR operations are required due to the nature of certain types of missions being flown.

**10-78 FAA COORDINATION**

a. Proposals for establishing a refueling tracks shall be submitted to the appropriate ARTCC with a copy to the appropriate regional military representative.

c. FAA regional Air Traffic divisions shall review each proposed VFR helicopter refueling route and coordinate it with other interested FAA divisions. The regional review will include a determination that proposed VFR refueling tracks are consistent with the criteria contained in this Part. Terminal Air Traffic facilities are not included in the development of these tracks.

d. Final approval authority with FAA concurrence rests with the headquarters of the appropriate military major command. Unusual requirements, not in accordance with this criteria, for limited/one-time use VFR tracks, will be coordinated directly with appropriate military headquarters.

**10-6-4 OPERATIONS OUTSIDE AN ALTRV**

a. Units shall submit an approval request directly to the ATC facility concerned at least 12 hours in advance, or as soon as possible, to permit coordination and receipt of approval.

b2. ARCP patterns or rendezvous points if En Route Cell Rendezvous is planned.

**10-6-8 VFR HELICOPTER REFUELING OPERATIONS**

Headquarters United States Air Force / Navy / Marine Corp / Army have stated a requirement to conduct VFR helicopter in-flight refueling operations at altitudes from 4,000 feet AGL down to 1,000 feet AGL at speeds below 150 knots.

Delete

**10-6-15 FAA COORDINATION**

a. Proposals for establishing VFR refueling tracks shall be submitted in the format and with the data depicted in Figure 10-4-1, to the appropriate ARTCC/CERAP with a copy to the appropriate regional military representative. In those airspace areas not under the direct jurisdiction of FAA, the theater command headquarters shall develop procedures for coordination and approval of proposed tracks and anchors.

c. FAA regional Air Traffic divisions shall review each proposed VFR helicopter refueling route and coordinate it with other interested FAA divisions. The regional review will include a determination that the proposed VFR refueling tracks are consistent with the criteria contained in this Part. Terminal Air Traffic facilities will be included in the development of tracks transiting their airspace.

d. Unusual requirements, not in accordance with this criteria, for limited/onetime use VFR tracks, will be coordinated directly with appropriate military headquarters.

**11-71 LOST COMMUNICATIONS TRANSPONDER OPERATIONS****a. IFR**

(1) Adjust transponder to reply on Mode 3/A Code 7700 during climb/descent to altitude filed for the next leg of the flight plan

(2) Then change to Code 7600 for a period of 15 minutes.

(3) At the end of each 15-minute period, squawk Code 7700 for a period of 1 minute, all other times squawk Code 7600.

**b. VFR.** (Refer to DOD FLIP, IFR Supplement and Airman's Information Manual).

Add

**11-6-11 LOST COMMUNICATIONS TRANSPONDER OPERATIONS**

Delete

Delete

Refer to transponder procedures in DOD FLIP, IFR Supplement and the AIM.

**12-100 UPT/SUPT OPERATIONAL DESCRIPTION**

Delete

**12-121 PURPOSE**

Delete

**12-122 BACKGROUND**

Delete

**4. OPERATIONAL IMPACT:** This procedure was removed at the request of the U.S. Army. Any letters of agreement that were developed need to be reviewed and personnel need to be briefed that VHIRP is no longer valid.

**1. PARAGRAPH NUMBER AND TITLE.** 12-12-6, Nonstandard Formation Tactics.

**2. BACKGROUND:** The change reflects changes in programs and nonstandard formation requirements.

**3. CHANGE:**

**OLD****12-136 SAC FORMATION TACTICS**

The Strategic Air Command, due to the size and maneuverability of its assigned aircraft, normally operate within a nonstandard cell formation. Bomber and tanker aircraft operating in a cell, except for the FB-111 aircraft, operate with 1 nautical mile spacing (B-52 uses 2 nautical miles) between cell members in trail and 500 feet vertical separation as illustrated in Figure 12-1 and Figure 12-2).

Add

**NEW****12-12-6 NONSTANDARD FORMATION TACTICS**

Some aircraft, due to the size and maneuverability, normally operate within a nonstandard cell formation. Bomber and tanker aircraft operating in a cell, operate with 1 nautical mile spacing (B-52 uses 2 nautical miles) between cell members in trail and 500 feet vertical separation as illustrated in Figure 12-12-1 and Figure 12-12-2).

**NOTE-**

Controllers shall not use flight leader's Mode C read-out for separation purposes. Asking the flight leader to "say altitude" only verifies the lead aircraft's altitude.

**a. Formation Departure Procedures.**

No change

(1) FB-111 - Operates in standard (wingtip) formation, except a nonstandard formation may be used for special tactical operations and air refueling.

(a) Takeoff Interval. Ten/twenty seconds when operating from runways less than 200 feet wide.

(b) Climb configuration. Wingmen "stack down" with 500 feet vertical separation between each aircraft until join up. Vertical separation is maintained until 2,000 feet slant range and visual acquisition of the flight leader.

(c) Intermediate Level Off. Block altitude required for any intermediate level off altitude assigned by ATC until flight leader confirms join up into standard formation. Cell formation is "stack down" with 500 feet separation between each cell member. Longitudinal spacing is 1 NM (2 NM for tactical contingency operations) but may be greater before established in cell en route formation.

(d) En Route Formation. Normally, all aircraft are contained within the standard formation envelope: i.e., 100 feet and 1 NM. In the nonstandard configurations, formation members are "stacked down" with 500 feet vertical separation and 1 nautical mile interval between each aircraft as shown in Figure 12-2. The last aircraft maintains the base altitude assigned.

(2) B-52/KC-135/KC10. Always operated in a nonstandard cell formation.

(a) Takeoff Interval. Normally, 1 minute between individual cell aircraft. KC-10 interval may be greater than 1 minute when individual aircraft gross weight will vary more than 100,000 pounds. The KC-10 flight leader will establish the interval and notify ATC what interval is being used.

1. B-52/KC-135/KC-10. Always operate in a nonstandard cell formation.

(a) Take-off Interval: Normally, 1 minute between individual cell aircraft. KC-10 interval may be greater than 1 minute when individual aircraft gross weight will vary more than 100,000 pounds. The KC-10 flight leader will establish the interval and notify ATC what interval is being used.

Delete

(b) Intermediate level-off: Block altitude is required for any intermediate level off altitude assigned by ATC. Wing aircraft "stack down" with 500 feet vertical separation between each cell aircraft and close to en route longitudinal spacing. Vertical and longitudinal spacing may be greater than normal until level-off at cruise altitude is attained. Controllers shall not use flight leader's Mode C readout for separation purposes until verification of formation configuration.

(c) En Route Formation: Nonstandard with wing-aircraft "stacked up" with 500 feet vertical separation and 1 nautical mile interval between aircraft as shown in Figure 12-2-1. The last aircraft maintains the base altitude assigned.

2. B-1. Always operated in a nonstandard cell formation.

(a) Take-off Interval: One minute between individual aircraft.

(b) Intermediate Level Off, Block altitude is required for any intermediate level off altitude assigned by air traffic control. Wingmen "stack down" with 500 feet vertical separation between each cell aircraft and close to enroute longitudinal spacing. Vertical and longitudinal spacing may be greater than normal until level off at cruise altitude is attained. Controllers shall not use flight leader's Mode C readout for separation purposes until verification of formation configuration.

En Route Formation. Nonstandard with wingmen "stacked up" with 500 feet vertical separation and 1 nautical mile interval between aircraft as shown in Figure 12-1. The lead aircraft maintains the base altitude assigned.

(b) Intermediate Level-off: Block altitude is required for any intermediate level off altitude assigned by ATC. Wing aircraft "stack down" with 500 feet vertical separation and close to 1 nautical mile longitudinal spacing. Separation and spacing may be greater until level off cruise altitudes are attained. Controllers shall not use flight leader's Mode C readout for separation purposes until verification of formation configuration.

(c) En Route Formation: Nonstandard with wing aircraft "stacked down" with 500 feet vertical separation and 1 nautical mile longitudinal spacing between aircraft as shown in Figure 12-2. The last aircraft maintains the base altitude assigned.

#### b. En Route Cell Formation Procedures.

No change

(1) En route cell formations, except for FB-111 aircraft operate in the nonstandard formation configuration indicated in subparagraph a and shown in Figures 12-1 and 12-2 except during aerial refueling. Aerial refueling formation configurations are shown in Figure 12-3 through 12-11.

1. En route cell formations operate in the nonstandard formation configuration indicated in subparagraph a and shown in Figures 12-12-1 and 12-12-2 except during aerial refueling. Aerial refueling formation configurations are shown in Figures 12-12-3 thru 12-12-11, Air Refueling Formation.

#### 4. OPERATIONAL IMPACT: None.

#### 1. PARAGRAPH NUMBER AND TITLE. 13-1-2, Airborne RADAR Unit (ARU).

2. **BACKGROUND:** The changes to this section clarifies the transfer of information between ATC and AWACS/MRU/ARU.

#### 3. CHANGE:

##### OLD

#### 13-2 AIRBORNE RADAR UNIT (ARU)

d. The ARU will not be involved in the transfer of control of aircraft to/from and ARTCC. Transfer of control shall be accomplished directly between the MRU and the appropriate ARTCC.

Add

Moved from 13-2d

Add

##### NEW

#### 13-1-2 AIRBORNE RADAR UNIT (ARU)

Moved into 13-1-3

#### 13-1-3 TRANSFER OF RESPONSIBILITY

The MRU/ARU's will not be involved in the transfer of control of aircraft to/from an ATC facility. Transfer of flight information shall be accomplished directly between the MRU/ARU and the appropriate ATC facility as specified in a letter of agreement.

a. Flight information shall be passed prior to the aircraft entering and/or leaving the ATCAA/SUA.



Add

b. Communications/monitoring responsibility by MRU: In the event flight information from the MRU to the ATC facility cannot be effected, the MRU will assist the flight in remaining within the assigned area. The MRU shall retain communications with and radar-monitor the aircraft until further clearance is received from ATC.

Add

**NOTE-**

In the event communication cannot be established, the MRU will instruct the flight to contact the ATC facility and request instructions.

**13-9 ADDITIONAL AWACS RESPONSIBILITIES**

b. The AWACS shall not conduct air traffic control operations below FL180 within U.S. airspace or in offshore airspace in which domestic ATC service is exercised unless primary and secondary (IFF) radars are operational.

c. Predetermined contingency fixes are developed for aircraft under the jurisdiction of the AWACS mission crew to proceed to in the event of AWACS system failure.

e. Radar correlation shall be accomplished by AWACS mission crew and the appropriate ARTCC at a mutually agreed time, but prior to transfer of control of the first aircraft to the MRU. The following procedures apply:

(1) AWACS mission crew shall correlate their radar while en route by reporting over an agreed upon reference point and requesting the ARTCC to advise if the report is accurate.

(2) The ARTCC shall select a random target in proximity to a common reference point. Transmit its Mode 3 code, and request the mission crew to state the range and bearing from the reference point

(3) AWACS radar will be considered correlated if the target is within 2 miles as depicted on the ARTCC radar. The ARTCC will state correlation confirmed or not correlated. adjustments may be made aboard the AWACS and correlation checks repeated. If the radar cannot be correlated, the AWACS must be treated as an ARU or the mission terminated.

**13-1-10 ADDITIONAL AWACS RESPONSIBILITIES**

b. The AWACS shall not provide services below FL180 within U.S. airspace or in offshore airspace in which domestic ATC service is exercised unless, the AWACS's primary and secondary (IFF) radars are operational.

Delete

d. Radar correlation shall be accomplished by AWACS crew prior to providing services in airspace released to AWACS. The following procedures apply:

1. AWACS radar will conduct a internal system cross correlation check. If internal system cross checks cannot be validated, the AWACS will be treated as an ARU or the mission terminated until validation can be completed.

2. The AWACS mission crew shall notify the appropriate ARTCC/CERAP or control facility of the internal system correlation check accuracy.

3. In the event AWACS primary/secondary radar, computer or Navigation Computer System (NCS) is inoperable due to a malfunction another internal correlation check will be accomplished prior to resumption as an MRU.

**13-10 TRANSFER OF CONTROL**

Delete

**13-11 SEPARATION BETWEEN PARTICIPATING AND NON-PARTICIPATING AIRCRAFT**

ATC facilities shall provide separation between non-participating IFR aircraft cleared to transit an ATCAA/SUA. Such separation shall be accomplished by coordination with the MRU at least 5 minutes prior to the ATCAA/SUA boundary penetration to obtain from the MRU a release to ATC of altitude/s and/or flight level/s throughout the entire ATCAA/SUA. A radar "point out" of non-participating aircraft will be effected with the MRU by ATC.

**13-1-11 SEPARATION BETWEEN PARTICIPATING AND NON-PARTICIPATING AIRCRAFT**

ATC facilities shall provide separation between non-participating IFR aircraft cleared to transit an ATCAA/SUA. Such separation shall be accomplished by coordination with the MRU at least 5 minutes prior to the ATCAA/SUA boundary penetration to obtain from the MRU a release to ATC of altitude/s and/or flight level/s throughout the entire ATCAA/SUA. A transfer of flight information of non-participating aircraft will be effected with the MRU by ATC.

**4. OPERATIONAL IMPACT:** This reflects MRU/ARU's inability to make "handoffs." The MRU/ARU can only transfer flight information. This is a major change from past procedures; refresher training to ensure controllers are aware of the MRU/ARU responsibilities.